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JAN. 25 1996.

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Return Receipt Requested

DRP-8J

C.W. Harmon, Manager
Operations Environmental
The UNO-VEN Company
UNO-VEN Refinery
135th & New Avenue
Lemont, Illinois 60439-3659

Re: Stormwater Basin (SWB) Closure
Documentation Report
ILD 041 550 567

Dear Mr. Harmon:

The United States Environmental Protection Agency (U.S. EPA) has reviewed your letter, dated January 16, 1996, containing additional information regarding the SWB Closure Documentation Report. This information was requested by the U.S. EPA in its letter, dated December 15, 1995. After review of this information, all requirements for closure appear to have been met. The U.S. EPA hereby approves the Closure Certification and SWB Closure Documentation Report, dated November 15, 1995, for the UNO-VEN Refinery in Lemont, Illinois.

As of the date of this approval, the requirements under 40 Code of Federal Regulations (CFR) Part 265, Subpart F-Groundwater Monitoring are no longer applicable for the SWB. However, this approval does not change the requirements of any applicable Illinois Environmental Protection Agency (IEPA) groundwater monitoring programs currently at or near the SWB, such as the Groundwater Management Zone (GMZ).

If you have any questions regarding this letter, please call Todd Gmitro, of my staff, at (312) 886-5909.

Sincerely,

ORIGINAL SIGNED BY
KARL E. BREMER

Karl E. Bremer, Chief
Waste Management Branch
Waste, Pesticides, and Toxics Division

cc: E. Bakowski, IEPA

DRP-8J\T.Gmitro\TG\6-5909\TDGMITRO\APPROVE.UVN\January 24, 1996

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Mr. C. W. Harmon, Manager
Operations Engineering
UNOVEN Company/Refinery
135th + New Avenue
Lemont, IL 60439-3659

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James A. Williams

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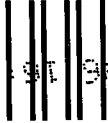


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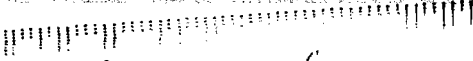
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Todd Gmitre

U.S. EPA, Region 5

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March 1993 (Reverse)

The UNO-VEN Company

OE 011-96



C. W. Harmon
Manager
Operations Environmental

135th Street & New Avenue
Lemont, Illinois 60439-3659

Telephone (708) 257-4450
Fax (708) 257-4364
harmonc@ref.uno-ven.com

**CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Z 049 707 775**

January 16, 1996

Mr. Todd Gmitro
Geologist
IL\INMI Section
Waste Management Branch
U. S. Environmental Protection Agency
Region 5, DRP-8J
77 W. Jackson Blvd.
Chicago, IL 60604-3590

RECEIVED

JAN 19 1996

**OFFICE OF RCRA
WASTE MANAGEMENT DIVISION
EPA, REGION V**

**Stormwater Basin (SWB) Closure -
UNO-VEN Lemont Refinery**

Dear Todd,

Enclosed please find clarification for questions raised in your December 15, 1995 letter regarding the SWB Closure Documentation Report dated November 15, 1995. This information appears to adequately address your concerns and will allow for final agency approval of the SWB closure.

If there are additional questions or information required please don't hesitate to contact me. Your cooperation throughout this project is appreciated. We look forward to a favorable response.

Sincerely,

C. W. Harmon

CWH:plm

cc\w\enc: D. Clay - IEPA



ENSR Consulting
and Engineering

740 Pasquinelli Drive
Westmont, IL 60559
(708) 887-1700
FAX (708) 850-5307

January 11, 1996

ENSR Project No: 6941-035-340

Mr. C. W. Harmon, Jr.
Manager, Operations Environmental
The UNO-VEN Company
135th and New Avenue
Lemont, Illinois 60439

SUBJECT: Response to EPA Comments on Stormwater Basin (SWB) Closure
Documentation Report

Dear Mr. Harmon:

ENSR Consulting and Engineering (ENSR) is pleased to provide a response to questions raised in the December 15, 1995, letter from Todd Gmitro, U.S. EPA to Claude Harmon, UNO-VEN regarding the subject report. A copy of the December 15, 1995, letter is provided as Attachment 1. As indicated in the U.S. EPA letter, it appears that all requirements for final closure of the SWB have been met; however, the Agency has requested that several questions regarding surface water analytical data be addressed before closure of the SWB is granted. The following paragraphs respond to EPA questions in the same order in which they appear in the Agency's letter.

Response to Question No. 1

The Agency has requested an explanation for using a different laboratory for analysis of surface water samples than the laboratory specified in the EPA-approved workplan. The workplan incorporates quality control procedures discussed in the Quality Assurance Project Plan (QAPP), provided as Appendix E of the EPA approved SWB Closure Plan. The previous round of closure confirmation samples were analyzed by AnalytiKem's Houston, Texas facility. The Houston laboratory was closed during the summer of 1993. The QAPP specified that chemical analyses will be performed at the AnalytiKem laboratories in Rock Hill, South Carolina, or Cherry Hill, New Jersey, or the laboratories of QAL in Lisle, Illinois. The QAPP is dated January 1994.

On April 29, 1994, AnalytiKem was sold by its parent company, American NuKem. The Rock Hill facility ceased to operate as a commercial laboratory and the Cherry Hill Laboratory was sold to American Environmental Network, Incorporated (AEN). In January of 1995, QAL, Inc. was sold to V.O.C. Analytical Laboratories, Inc. (VOC). VOC closed the former QAL facility and opened a sales office in Naperville. Due to these unforeseen developments, ENSR

January 11, 1996
Mr. C. W. Harmon, Jr.
Page 2

retained National Environmental Testing (NET), Inc of Bartlett, Illinois, to perform SWB surface water analyses.

NET was selected based on the laboratory's reputation and the results of two audits performed by ENSR chemists in 1989 and 1994. Both audits involved a review of laboratory facilities and quality assurance/quality control (QA/QC) procedures. On both occasions, ENSR chemists approved the use of NET for analytical services by ENSR. Additionally, NET has been used in the past for analysis of groundwater samples during the RCRA groundwater monitoring program for SWB closure and has provided data of high quality and integrity.

Response to Question No. 2a

Matrix spike/matrix spike duplicates (MS/MSD) for semivolatile compound analysis were not prepared by the laboratory due to insufficient sample volume. The laboratory did run a laboratory control standard/laboratory control standard duplicate (LCS/LCSD), as a method of assessing precision and accuracy of semivolatile compound analysis. For water matrix samples, LCS/LCSD sample results approximate MS/MSD sample results for the purpose of assessing analysis precision and accuracy of semi-volatile sample analysis.

The laboratory control standard is de-ionized water spiked with the compounds of interest. The LCS is taken through the entire extraction procedure (the same processes as the samples). LCS/LCSD data can be found in Appendix D of the Closure Report. A copy of LCS/LCSD data is also provided in Attachment 2 to this letter and are identified with laboratory identification numbers c3160.d and c3161.d, respectively.

The LCS/LCSD data summary indicates that the spike recovery and percent recovery for all semivolatile compounds, except for pyrene were within acceptable QA/QC limits. LCS spike recovery and percent recovery for pyrene were slightly above the acceptable QA/QC range. Pyrene, however, was not detected in any of the SWB surface water samples. LCS/LCSD data, therefore, indicates that semivolatile analysis results are valid.

Response to Question No. 2b

In order to meet method requirements, the laboratory must analyze a MS/MSD per each sample delivery group of 20 samples. Sample delivery groups are set up with samples of similar matrix, such as groundwater and surface water, wastewater, or soil. During SWB closure confirmation sampling, the field sampling team did not designate a specific surface water sample for MS/MSD. If field samplers do not designate a sample for MS/MSD

January 11, 1996
Mr. C. W. Harmon, Jr.
Page 3

analysis, one is chosen at random as the MS/MSD sample. In the event there is insufficient sample volume for an MS/MSD extraction, then LCS/LCSD samples are extracted and analyzed to assess precision and accuracy.

The UNO-VEN SWB surface water samples were similar to a groundwater matrix and since there were less than 20 surface water samples, other groundwater samples were included in the sample delivery group. Therefore, the sample delivery group associated MS/MSD is from a surface water sample from the UNO-VEN SWB or a groundwater sample provided by another laboratory customer.

MS/MSD analyses were performed on samples collected from the UNO-VEN SWB for the following:

Sample No.	FIELD ID No.	Analysis Parameter	MS%	MSD%	RFD%
324381	1C	Cr, hexavalent	93	91	2.2
324392	10N	Cr, hexavalent	96	100	4.0
324395	12B	VOCs 8240	See Attached MS/MSD Summary ²		
324395	18E-DUP	Pb, GFAA	117	111	5.3
324395	18E-DUP	Se, GFAA ¹	64	63	1.6

¹ MS/MSD low recoveries for Se, GFAA post digestion spikes were analyzed w/recoveries of 70% and 68%. Therefore, the Method of Standard Additions was performed. Analytical report was flagged with M+ = Analyte quantified by MSA due to low spike recovery.

² MS/MSD summary for VOCs is provided in Attachment 3.

The remaining metals MS/MSD analyses were performed on a groundwater sample from another project. Results can be found in Appendix D of the UNO-VEN Closure Report.

A review of MS/MSD data for metals and volatile compounds indicates that percent recoveries and relative percent differences (RPD) values are within allowable QA/QC limits, with the exception of selenium. Since MS/MSD recoveries for selenium were below the acceptable range of 75 to 125%, the Method of Standard Additions was performed as required by the analysis method. MS/MSD data for metals and volatile compounds, therefore, indicates that the laboratory results are valid and can be relied upon for closure verification.

January 11, 1996
Mr. C. W. Harmon, Jr.
Page 4

Response to Question No. 2c

Laboratory control standards were extracted and analyzed for semi-volatile compounds.
See response to question 2a above.

If UNO-VEN or the Agency has further questions regarding the responses presented above,
please do not hesitate to contact us at (708)-887-1700.

Sincerely,



Gordon Aller Ferguson
Project Manager

GAF/kw

cc: L. Meschede - ENSR

Reference No. 96-01-W010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

December 15, 1995

REPLY TO THE ATTENTION OF:
DRP-8J

C.W. Harmon, Manager
Operations Environmental
The UNO-VEN Company
UNO-VEN Refinery
135th & New Avenue
Lemont, Illinois 60439-3659

Re: Stormwater Basin (SWB) Closure
Documentation Report

Dear Mr. Harmon:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the document entitled, "Stormwater Basin Closure Report", dated November 15, 1995, for the UNO-VEN Refinery in Lemont, Illinois. This document was submitted according to the U.S. EPA's Modified Closure Plan approval letter, dated May 31, 1994; and the U.S. EPA's sludge removal approval letter, dated January 31, 1995. It appears that all requirements for final closure of the SWB have been met, and the U.S. EPA concurs with the documented risk assessment. However, prior to final approval of the closure documentation report and certification, please provide information to clarify the following questions:

1. Explain why a laboratory separate from that in the approved workplan was used for sample analysis. As discussed with ENSR today, apparently the original laboratory has closed, thus resulting in the change. This is a valid reason for such an amendment to the original plan, but it must be documented prior to approval of the final report; and
2. The analytical program appears to have been performed within the context of the approved workplan, and may be considered a valid data package. However, please clarify the following:
 - a. Only matrix spike/matrix spike duplicates (MS/MSD) data for metals and volatile compounds was found in Appendix D of the closure report. Were MS/MSD data for semivolatile compounds determined? If so, please provide this data, otherwise explain how precision and accuracy were assessed for semivolatile compounds; and
 - b. The laboratory notes that "Matrix Spike Samples may not be samples from this job." This should be clarified, since the approved closure plan, and Methods 8240 and 8270 define matrix spike samples as being taken from the field. If field samples for matrix spikes were used, provide this data, otherwise briefly explain the comparability of the laboratory control spikes to a field sample matrix spike; and



- c. Were "Laboratory Control Standards" for semivolatile compounds determined? In the Quality Control Reports (Appendix D), only metals and volatiles data was found.

The above information is requested within 30 days of receipt of this letter. Please call me at (312) 886-5909, if you have any questions regarding this letter.

Sincerely,



Todd Gmitro, Geologist
IL\IN\MI Section
Waste Management Branch

cc: G. Ferguson, ENSR
E. Bakowski, IEPA

Attachment 2

LCS/LCSD Data Summary for Semivolatile Analysis

NET
Rockford
Semi-Volatile Water LCS/LCSD Summary
Form III/XI - Page 1 of 4

Method: 8270
Instrument ID: CADILAC
Date Analyzed: 06 Oct 95
LCS Data File: C3160.D
LCSD Data File: C3161.D

Compound	Spike Amt.	LCS Rec	LCSD Rec
Acenaphthene	100.00	104.32	107.42
Acenaphthylene	100.00	98.20	103.26
Anthracene	100.00	117.05	115.17
Benzo(a)anthracene	100.00	115.08	111.64
Benzo(b)fluoranthene	100.00	102.80	97.32
Benzo(k)fluoranthene	100.00	117.87	116.07
Benzo(a)pyrene	100.00	111.13	109.05
Benzo(g,h,i)perylene	100.00	115.43	109.99
Butylbenzylphthalate	100.00	111.43	106.18
bis(2-Chloroethyl)ether	100.00	67.95	74.55
bis(2-Chloroethoxy)methane	100.00	88.80	97.05
bis(2-chloroisopropyl)ether	100.00	70.97	75.59
bis(2-Ethylhexyl)phthalate	100.00	103.11	99.85
4-bromophenyl-phenylether	100.00	101.89	99.99
2-Chloronaphthalene	100.00	90.84	90.95
4-Chlorophenyl-phenylether	100.00	95.24	93.71
Chrysene	100.00	111.11	106.01
Dibenz(a,h)anthracene	100.00	110.60	104.72
Di-n-butylphthalate	100.00	108.76	103.24
1,2-Dichlorobenzene	100.00	66.45	71.88
1,3-Dichlorobenzene	100.00	63.98	71.82
1,4-Dichlorobenzene	100.00	69.76	77.36
3,3'-Dichlorobenzidine	100.00	84.67	90.26
Diethylphthalate	100.00	105.96	101.03
Dimethylphthalate	100.00	99.88	98.02
2,4-Dinitrotoluene	100.00	109.18	108.51
2,6-Dinitrotoluene	100.00	103.97	103.84
Di-n-octylphthalate	100.00	106.83	103.08
Fluorene	100.00	110.97	109.27
Fluoranthene	100.00	112.62	107.81

* outside QA/QC limits

Comments:

NET
Rockford
Semi-Volatile Water LCS/LCSD Summary
Form III/XI - Page 2 of 4

Method: 8270
Instrument ID: CADILAC
Date Analyzed: 06 Oct 95
LCS Data File: C3160.D
LCSD Data File: C3161.D

Compound	Spike Amt.	LCS Rec	LCSD Rec
Hexachlorobenzene	100.00	103.62	100.21
Hexachlorobutadiene	100.00	73.78	83.34
Hexachloroethane	100.00	61.43	69.67
Indeno(1,2,3-cd)pyrene	100.00	113.61	109.09
Isophorone	100.00	89.94	98.21
Naphthalene	100.00	90.00	96.95
Nitrobenzene	100.00	82.38	92.85
N-Nitroso-di-n-propylamine	100.00	83.57	89.57
Phenanthrene	100.00	108.25	105.43
Pyrene	100.00	<i>out</i> 119.06 *	113.44
1,2,4-Trichlorobenzene	100.00	79.43	88.79
4-Chloro-3-methylphenol	100.00	114.90	120.55
2-Chlorophenol	100.00	83.48	84.72
Dichlorophenol	100.00	98.02	104.53
2,4-Dimethylphenol	100.00	82.18	96.88
2,4-Dinitrophenol	100.00	110.50	97.53
4,6-Dinitro-2-methylphenol	100.00	117.67	116.16
2-Nitrophenol	100.00	100.27	111.90
4-Nitrophenol	100.00	68.89	68.28
Pentachlorophenol	100.00	112.44	107.98
Phenol	100.00	49.30	51.99
2,4,6-Trichlorophenol	100.00	91.60	87.66

* = outside QA/QC limits

Comments:

QA/QC Muncher Version 3.41 ©1992-1995 Computer Specialties 283251067

pyrene out in LCS

OK in LCS dup

*no lib of this compound
in the samples*

NET
Rockford
Semi-Volatile Water LCS/LCSD Summary
Form III/XI - Page 3 of 4

Method: 8270
Instrument ID: CADILAC
Date Analyzed: 06 Oct 95
LCS Data File: C3160.D
LCSD Data File: C3161.D

Compound	% Range	LCS %	LCSD %
Acenaphthene	47 - 145	104.3	107.4
Acenaphthylene	33 - 145	98.2	103.3
Anthracene	27 - 133	117.1	115.2
Benzo(a)anthracene	33 - 143	115.1	111.6
Benzo(b)fluoranthene	24 - 159	102.8	97.3
Benzo(k)fluoranthene	11 - 162	117.9	116.1
Benzo(a)pyrene	17 - 163	111.1	109.1
Benzo(g,h,i)perylene	D - 219	115.4	110.0
Butylbenzylphthalate	D - 152	111.4	106.2
bis(2-Chloroethyl)ether	12 - 158	68.0	74.6
bis(2-Chloroethoxy)methane	33 - 184	88.8	97.1
bis(2-chloroisopropyl)ether	36 - 166	71.0	75.6
bis(2-Ethylhexyl)phthalate	8 - 158	103.1	99.8
4-Chlorophenyl-phenylether	53 - 127	101.9	100.0
2-Chloronaphthalene	60 - 118	90.8	91.0
4-Chlorophenyl-phenylether	25 - 158	95.2	93.7
Chrysene	17 - 168	111.1	106.0
Dibenz(a,h)anthracene	D - 227	110.6	104.7
Di-n-butylphthalate	1 - 118	108.8	103.2
1,2-Dichlorobenzene	32 - 129	66.5	71.9
1,3-Dichlorobenzene	D - 172	64.0	71.8
1,4-Dichlorobenzene	20 - 124	69.8	77.4
3,3'-Dichlorobenzidine	D - 262	84.7	90.3
Diethylphthalate	D - 114	106.0	101.0
Dimethylphthalate	D - 112	99.9	98.0
2,4-Dinitrotoluene	39 - 139	109.2	108.5
2,6-Dinitrotoluene	50 - 158	104.0	103.8
Di-n-octylphthalate	4 - 146	106.8	103.1
Fluorene	59 - 121	111.0	109.3
Fluoranthene	59 - 121	112.6	107.8

* Outside QA/QC limits
D = analyte must be detected; must be greater than zero

Comments:

NET
Rockford
Semi-Volatile Water LCS/LCSD Summary
Form III/XI - Page 4 of 4

Method: 8270
Instrument ID: CADILAC
Date Analyzed: 06 Oct 95
LCS Data File: C3160.D
LCSD Data File: C3161.D

Compound	% Range	LCS %	LCSD %
Hexachlorobenzene	D - 152	103.6	100.2
Hexachlorobutadiene	24 - 116	73.8	83.3
Hexachloroethane	40 - 113	61.4	69.7
Indeno(1,2,3-cd)pyrene	D - 171	113.6	109.1
Isophorone	21 - 196	89.9	98.2
Naphthalene	21 - 133	90.0	97.0
Nitrobenzene	35 - 180	82.4	92.8
N-Nitroso-di-n-propylamine	D - 230	83.6	89.6
Phenanthrene	54 - 120	108.3	105.4
Pyrene	52 - 115	119.1 *	113.4
1,2,4-Trichlorobenzene	44 - 142	79.4	88.8
4-Chloro-3-methylphenol	22 - 147	114.9	120.6
2-Chlorophenol	23 - 134	83.5	84.7
2,4-Dichlorophenol	39 - 135	98.0	104.5
2,4-Dimethylphenol	32 - 119	82.2	96.9
2,4-Dinitrophenol	D - 191	110.5	97.5
4,6-Dinitro-2-methylphenol	D - 132	117.7	116.2
2-Nitrophenol	29 - 182	100.3	111.9
4-Nitrophenol	D - 132	68.9	68.3
Pentachlorophenol	14 - 176	112.4	108.0
Phenol	5 - 112	49.3	52.0
2,4,6-Trichlorophenol	37 - 144	91.6	87.7

* = outside QA/QC limits

D = analyte must be detected; must be greater than zero

Comments:

NET

Bartlett Division

Volatile Water Matrix Spike/Matrix Spike Duplicate Summary

Form III - Page 1 of 2

Method: 8240

Instrument ID: 7001C

Date Analyzed: 10 Oct 95

Unspiked Data File: C5375.D

MS Data File: C5376.D

MSD Data File: C5377.D

Compound	Unspiked	Spike Amt.	MS Rec	MSD Rec
Benzene	0.00	20.00	18.32	17.96
Bromoform	0.00	20.00	14.62	14.23
Bromomethane	0.00	20.00	22.06	20.45
Carbon tetrachloride	0.00	20.00	18.70	18.59
Chlorobenzene	0.00	20.00	18.04	17.66
Chlorodibromomethane	0.00	20.00	16.80	16.82
2-Chloroethylvinylether	0.00	20.00	13.37	13.40
Chloroform	0.00	20.00	20.02	19.41
Chloromethane	0.00	20.00	15.61	14.91
Dichlorobromomethane	0.00	20.00	17.28	17.28
1,2-Dichlorobenzene	0.00	20.00	17.45	17.45
1,3-Dichlorobenzene	0.00	20.00	17.73	17.51
1,4-Dichlorobenzene	0.00	20.00	16.75	16.58
1,1-Dichloroethane	0.00	20.00	21.31	21.88
1,2-Dichloroethane	0.00	20.00	20.82	19.98
1,1-Dichloroethene	0.00	20.00	17.81	17.30
1,2-trans-Dichloroethene	0.00	20.00	19.46	18.69
1,2-Dichloropropane	0.00	20.00	18.24	18.26
1,3-cis-Dichloropropene	0.00	40.00	34.21	33.79
1,3-trans-Dichloropropene	0.00	40.00	35.45	34.76
Ethylbenzene	0.00	20.00	17.68	18.05
Methylene chloride	0.00	20.00	19.98	19.28
1,1,2,2-Tetrachloroethane	0.00	20.00	17.99	18.01
Tetrachloroethene	0.00	20.00	17.33	18.83
Toluene	0.00	20.00	18.31	17.69
1,1,1-Trichloroethane	0.00	20.00	19.52	19.30
1,1,2-Trichloroethane	0.00	20.00	19.51	18.99
Trichloroethene	0.00	20.00	18.46	18.42
Trichlorofluoromethane	0.00	20.00	27.61	25.58
Vinyl chloride	0.00	20.00	17.70	16.56

Comments:

NET

Bartlett Division

Volatile Water Matrix Spike/Matrix Spike Duplicate Summary

Form III - Page 2 of 2

Method: 8240

Instrument ID: 7001C

Date Analyzed: 10 Oct 95

Unspiked Data File: C5375.D

MS Data File: C5376.D

MSD Data File: C5377.D

Compound	% Range	RPD	MS %	MSD %	Calc. RPD
Benzene	37 - 151	20	91.6	89.8	2.0
Bromoform	45 - 169	20	73.1	71.2	2.7
Bromomethane	D - 242	20	110.3	102.3	7.6
Carbon tetrachloride	70 - 140	20	93.5	93.0	0.6
Chlorobenzene	37 - 160	20	90.2	88.3	2.1
Chlorodibromomethane	53 - 149	20	84.0	84.1	0.1
2-Chloroethylvinylether	D - 305	20	66.8	67.0	0.2
Chloroform	51 - 138	20	100.1	97.1	3.1
Chloromethane	D - 273	20	78.1	74.6	4.6
Dichlorobromomethane	35 - 155	20	86.4	86.4	0.0
1,2-Dichlorobenzene	18 - 190	20	87.3	87.3	0.0
1,3-Dichlorobenzene	59 - 156	20	88.7	87.6	1.2
1,4-Dichlorobenzene	18 - 190	20	83.8	82.9	1.0
1,1-Dichloroethane	59 - 155	20	106.6	109.4	2.6
1,2-Dichloroethane	49 - 155	20	104.1	99.9	4.1
1,1-Dichloroethene	D - 234	20	89.1	86.5	2.9
1,2-trans-Dichloroethene	54 - 156	20	97.3	93.5	4.0
1,2-Dichloropropane	D - 210	20	91.2	91.3	0.1
1,3-cis-Dichloropropene	D - 227	20	85.5	84.5	1.2
1,3-trans-Dichloropropene	17 - 183	20	88.6	86.9	2.0
Ethylbenzene	37 - 162	20	88.4	90.3	2.1
Methylene chloride	D - 221	20	99.9	96.4	3.6
1,1,2,2-Tetrachloroethane	46 - 157	20	89.9	90.1	0.1
Tetrachloroethene	64 - 148	20	86.6	94.1	8.3
Toluene	47 - 150	20	91.6	88.5	3.4
1,1,1-Trichloroethane	52 - 162	20	97.6	96.5	1.1
1,1,2-Trichloroethane	52 - 150	20	97.6	94.9	2.7
Trichloroethene	71 - 157	20	92.3	92.1	0.2
Trichlorofluoromethane	17 - 181	20	138.1	127.9	7.6
Vinyl chloride	D - 251	20	88.5	82.8	6.7

* = outside QA/QC limits

D = analyte must be detected; must be greater than zero

Comments:



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

U.S. EPA

December 15, 1995

REPLY TO THE ATTENTION OF:
DRP-8J

C.W. Harmon, Manager
Operations Environmental
The UNO-VEN Company
UNO-VEN Refinery
135th & New Avenue
Lemont, Illinois 60439-3659

Re: Stormwater Basin (SWB) Closure
Documentation Report

Dear Mr. Harmon:

The United States Environmental Protection Agency (U.S. EPA) has reviewed the document entitled, "Stormwater Basin Closure Report", dated November 15, 1995, for the UNO-VEN Refinery in Lemont, Illinois. This document was submitted according to the U.S. EPA's Modified Closure Plan approval letter, dated May 31, 1994; and the U.S. EPA's sludge removal approval letter, dated January 31, 1995. It appears that all requirements for final closure of the SWB have been met, and the U.S. EPA concurs with the documented risk assessment. However, prior to final approval of the closure documentation report and certification, please provide information to clarify the following questions:

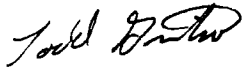
1. Explain why a laboratory separate from that in the approved workplan was used for sample analysis. As discussed with ENSR today, apparently the original laboratory has closed, thus resulting in the change. This is a valid reason for such an amendment to the original plan, but it must be documented prior to approval of the final report; and
2. The analytical program appears to have been performed within the context of the approved workplan, and may be considered a valid data package. However, please clarify the following:
 - a. Only matrix spike/matrix spike duplicates (MS/MSD) data for metals and volatile compounds was found in Appendix D of the closure report. Were MS/MSD data for semivolatile compounds determined? If so, please provide this data, otherwise explain how precision and accuracy were assessed for semivolatile compounds; and
 - b. The laboratory notes that "Matrix Spike Samples may not be samples from this job." This should be clarified, since the approved closure plan, and Methods 8240 and 8270 define matrix spike samples as being taken from the field. If field samples for matrix spikes were used, provide this data, otherwise briefly explain the comparability of the laboratory control spikes to a field sample matrix spike; and



- c. Were "Laboratory Control Standards" for semivolatile compounds determined? In the Quality Control Reports (Appendix D), only metals and volatiles data was found.

The above information is requested within 30 days of receipt of this letter. Please call me at (312) 886-5909, if you have any questions regarding this letter.

Sincerely,



Todd Gmitro, Geologist
IL\IN\MI Section
Waste Management Branch

cc: G. Ferguson, ENSR
E. Bakowski, IEPA

DRP-8J\T.Gmitro\TG\6-5909\TDGMITRO\FINALNOD.UVN\December 15, 1995



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY

USEPA

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217-524-3300

December 15, 1995

Mr. Claude Harmon
Manager, Operations Environmental
UNO-VEN Company
UNO-VEN Refinery
135th Street and New Avenue
Lemont, IL 60439-3659

Re: 1978030004 -- Will County
UNO-VEN
Chicago Refinery
ILD041550567
RCRA Permit Log No: 162

Dear Mr. Harmon:

The Illinois Environmental Protection Agency has reviewed UNO-VEN's response to the first completeness review Notice of Deficiency NOD dated October 11, 1995. The Post-Closure permit application for the four land treatment units is not considered to be complete at this time. A list of deficiencies identified during this second completeness review is included in the attached Notice of Deficiency (NOD).

Each of the deficiencies must be addressed before the Agency can begin the technical review of your permit application. Your response must be submitted in quadruplicate and postmarked no later than February 13, 1996. Failure to submit the required information by this date could subject UNO-VEN to enforcement action. The response should be in a format which allows incorporation of the new information into the appropriate sections of your application. To allow for a proper review of this new information, the location of the response to each deficiency should be identified in a list cross-referencing these items. Each revised page or drawing must have the revision date identified on them for tracking purposes.

A certification identical to that outlined at 35 Ill. Adm. Code 702.126 must accompany your submission. The original and three copies of the new information and certification should be submitted to the following address:

UNO-VEN: Completeness NOD

Page 2

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, IL 62794-9276

If you have any questions regarding this letter, please feel free to call Rob Watson, P.E. of my staff at 217-524-3265.

Sincerely,

Edwin C. Bakowski
by JHK

Edwin C. Bakowski, P.E.
Manager, Permit Section
Bureau of Land

ECB:WRW:uno-ven:comp-nod.2

Attachment

cc: Hak Cho, USEPA Region V, w/attachment ✓
Kelley Moore, USEPA Region V, w/o attachment
Tom Hall, UNOCAL, w/attachment
Gary Cipriano, Geraghty & Miller, Inc., w/attachment

Second Completeness NOD
UNO-VEN, Chicago Refinery
RCRA Permit Log No: 162

GENERAL

1. The application must follow the format of the decision guide.
2. The Part A must indicate if the owner and operator are the same. Only the owner signature and address are provided.
3. Drawings identified as "for permit purposes only; not to be used for construction" are not acceptable. All drawings, plans, etc. in the application must be final drawings.
4. The application must address the corrective action management unit (CAMU) regulations at 35 IAC 724 Subpart S and how the placement of the nonhazardous sludge from the storm water basin will comply with these requirements.

SECTION B

5. Legal Description: A statement that the refinery property includes parts of several different Sections in two different townships is not a legal description. For, example, the same complete written legal description of the refinery that was filed with the county (and/or city) needs to be included as part of the application.
6. Injection wells: The revisions to page B-3 do not address the requirement to identify any injection wells within 1500 feet of the property line. The application must identify any injection wells or state that there are none within 1500 feet of the property line.
7. B-2a: Topographic Map: Section B of the application still does not discuss Loading/Unloading Areas, Run-on/Run-off Controls, or Solid Waste Units. In particular, the loading/unloading areas used by tank trucks and barges and the pipelines used to pump oil to and from the site must be discussed in the text and identified on the maps of the site.

UNO-VEN: Second Completeness NOD
RCRA Log No. 162

8. B-2b: Additional Map Requirements for Land Disposal Facilities: Section B of the application must address the individual requirements of this checklist item. UNO-VEN may reference other parts of the application to meet this requirement. However, references must be to specific sections or drawings. References to page numbers are not acceptable as the page numbers will likely change throughout the course of the review. Finally, Page B-3a that was referenced on UNO-VEN's checklist was not provided.

SECTION C

9. C-2g: Land Ban: Waste analysis requirements to meet the land disposal restrictions must be discussed in the application. UNO-VEN placed solid waste from one hazardous waste unit (the stormwater basin) on another hazardous waste unit (the LTA). Therefore, UNO-VEN must address this requirement or justify why it is not applicable.

SECTION I

10. I-1: Closure Plan: The application must include detailed design drawings that show all aspects of the final cover systems. The drawings of the four units in the Land Treatment Area (LTA) are not complete for the following reasons:
- a. As noted above, all drawings must be final design drawings,
 - b. the drawings must show all of the contours for all of the units. Drawings 5 and 9 do not include all of the contours for the northern units.
 - c. at least one set of plan sheets must show the limits of the existing units, the limits of where the waste will be spread, and the final cover (Drawing 5 seems to show that waste will be spread outside of the existing limits of the northern LTA units.),
 - d. the drawings must be expanded to show the areas surrounding the LTA in order to show how the run-on to and run-off from the LTA will flow.
 - e. cross sections of the waste, the cover systems, and drainage systems. The cross sections should include all critical areas of the LTA. They must show multiple units and the drainage features. Example locations include, but are not limited to, the entire length of the following grid lines 2200W, 2500W, 2600W, 6700N, 6600N, 6350N, 6300N, 6200N, on Drawing 9, and 5000N, 5700N, 2900W, 3200W on Drawing 10.

UNO-VEN: Second Completeness NOD
RCRA Log No. 162

- f. details and specifications of the drainage and erosional controls such as the diversion ditch, culverts, rip-rap, etc. must be shown on the drawings,
 - g. detailed drawings that show the transition from waste to the final cover to the diversion channel (or drainage ditches and the intermittent stream).
 - h. monitoring wells, surface water sampling points, and bench marks must be indicated on these drawings.
-
- 10. I-1: Closure Plan: The plan must include calculations that show that the proposed drainage system (the ditches and culverts) is properly sized for the peak run-off that will flow into it.
 - 11. I-1: Closure Plan: Section 3 must identify the construction specifications of the storm water basin sludge (eg. minimum density, etc.).
 - 12. I-1: Closure Plan: Section 3 must identify the hydraulic conductivity of the compacted cover material.

SECTION K

- 13. K-2: Engineering Certification: An Engineering Certification is not provided. UNO-VEN's response to this item states that this requirement is not applicable. This is not correct. Examples of technical information that should be certified by a P.E. include figure B-4, the figures in the closure plan (Appendix I-1), etc.
- 14. K-3: Prior Conduct Certification: The Prior Conduct Certification provided with Revision No. 1 is not complete. It does not list a person for the Owner/Operator or a social security number.

UNO-VEN
Products

The UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761

OE 199-95

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Z 049 707 863

J. W. Branch
General Manager

September 29, 1995

RECEIVED
OCT 02 1995

OFFICE OF RCRA
WASTE MANAGEMENT DIVISION
EPA, REGION V

Mr. Todd Gmitro
Geologist
United States Environmental Protection Agency (U.S. EPA)
Region V, Mail Code HRP-8J
77 W. Jackson Blvd.
Chicago, IL 60604-3596

Stormwater Basin (SWB) Closure,
UNO-VEN Refinery
ILD 041 550 567

Dear Todd,

This is to confirm your phone conversation with Robert Helton September 27, 1995 concerning the Closure Documentation Report for the referenced project. It was agreed that UNO-VEN would only include a typical manifest utilized for disposing of filtercake and dike wall materials. It was also agreed that typical laboratory reports for filtercake and dike wall materials would be satisfactory.

UNO-VEN will keep all original manifests on file as prescribed by regulation. In addition, original laboratory analysis will be kept on file. Manifest numbers and quantities of material will be furnished as requested.

If there are questions or additional information required please contact me at (708) 257-4450.
Thank you for your cooperation.



C. W. Harmon
Manager, Operations Environmental

CWH:plm

cc: R.E. Helton

C-417-M-3

UNO-VEN
Products

The **UNO-VEN Company**
UNO-VEN Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761

OE 192-95

J. W. Branch
General Manager

CERTIFIED MAIL
RETURNED RECEIPT REQUESTED
#Z 049-707-861

September 21, 1995

Mr. Edwin Bakowski, P.E.
Illinois Environmental Protection Agency
Bureau of Land --#33
Permit Section
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276

Required Notification
re-197803004 -- Will County
UNO-VEN
Chicago Refinery
ILD041550567
Log No. C-417-M-3
RCRA Closure

Dear Sir:

This is a notification that the last load of dried Stormwater Basin Solids was stockpiled on the landform on September 3, 1995. This notification is required under an amended landfarm closure document received in late July, 1995.

If you have any questions, please contact me at (708) 257-4450.

Sincerely,

C W Harmon /LDE
C. W. Harmon
Manager, Operations Environmental

LDE:pyp

Attachment

RECEIVED

SEP 25 1995

PERMIT SECTION



Illinois Environmental Protection Agency

P.O. Box 19276, Springfield, IL 62794-9276

**RCRA INTERIM STATUS CLOSURE AND POST-CLOSURE
CARE PLANS GENERAL FORM
LPC-PA18**

THIS FORM MUST ACCOMPANY ANY RCRA INTERIM-STATUS CLOSURE AND/OR POST-CLOSURE CARE PLANS OR MODIFICATION REQUEST SUBMITTED TO THE DIVISION OF LAND POLLUTION CONTROL. THE ORIGINAL AND TWO COPIES OF ALL DOCUMENTS SUBMITTED MUST BE PROVIDED.

FACILITY IDENTIFICATION (Information about the facility where the units are located which are addressed in this closure plan)

Name: VNO-VEN Company County: Will
 Street Address: 135th St. + New Ave Site # (IEPA): 1978030004
 City: Lemont IL 60439 Site No. (USEPA): IL D041550567

OWNER INFORMATION

Name: VNO-VEN Company
 Mailing Address: VNO-VEN Refinery
135th St. + New Ave.
Lemont IL 60439
 Contact Name: C W Harmon
 Contact Title: Manager, Oper. Envir
 Phone #: 708-257-4450

OPERATOR INFORMATION

Same as Owner

TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ Original (New) Closure Plan
☐ Original (New) Post-Closure Plan
☐ Response to Disapproval letter
☐ Modification Request
☒ Additional Information for / / Submittal (Log No. C-417-M-3 if known)

Log No. of Most Recent Agency
Approval/Disapproval Letter

Date of Most Recent Agency
Approval/Disapproval Letter

DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted)

Letter of notification regarding sludge stockpiling on
landfarm plot.

LIST OF DOCUMENTS SUBMITTED (identify all documents in this submittal, including the cover letter)

Letter

UNITS UNDERGOING CLOSURE (please identify what type of units are addressed in the plan, their capacities and whether they are on the RCRA Part A for the facility)

Unit	Unit Code	Number of Units Closing	Capacity	On Part A (Y/N)
Storage:				
Container (barrel, drum, etc.)	S01	<u> </u>	<u> </u>	
Tank	S02	<u> </u>	<u> </u>	
Waste Pile	S03	<u> </u>	<u> </u>	
Surface Impoundment	S04	<u> </u>	<u> </u>	

RECEIVED

SEP 25 1995

PERMIT SECTION



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY

USEPA

Mary A. Gade, Director
217-524-3300

2200 Churchill Road, Springfield, IL 62794-9276

September 14, 1995

Mr. Claude Harmon
Manager, Operations Environmental
UNO-VEN Company
UNO-VEN Refinery
135th Street and New Avenue
Lemont, IL 60439-3659

Re: 1978030004 -- Will County
UNO-VEN
Chicago Refinery
ILD041550567
RCRA Permit Log No: 162

Dear Mr. Harmon:

This letter is in response to the letter from Geraghty & Miller dated August 25, 1995 and received August 30, 1995.

The request to extend the due date for submission of UNO-VEN's response to the first completeness NOD on the post-closure permit application until October 13, 1995 is hereby approved.

If you have any questions regarding this letter, please feel free to call Rob Watson, P.E. at 217-524-3265.

Sincerely,

Edwin C. Bakowski, P.E.
Manager, Permit Section
Bureau of Land

ECB:WRW:p-close\uno-ven\extend.1

cc: George Hamper, USEPA Region V
Gary Cipriano, Geraghty & Miller
Tom Hall, UNO-CAL

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

DATE: August 14, 1995

SUBJECT: UNO-VEN Stormwater Basin (SWB) Closure

Todd Gmitro
FROM: Todd Gmitro, Geologist
RCRA Permitting Branch, IL/MN/WI Section

TO: RCRA Files

On August 14, 1995, I conducted a site visit at the UNO-VEN Refinery in Lemont, Illinois, to inspect the progress of closure activities for the SWB. My last visit was on July 20, 1995. To date, final closure activities have been completed for the east portion of the SWB, including: dredging; dewatering; sludge removal; water washing of the basin walls; stained berm and other rock debris removal; and final water washing of the basin floor.

Several feet of stormwater and noncontact ~~blower~~^{boiler} blowdown water was present in the east SWB. No oil seeps were observed within the SWB and the water did not have an oily sheen. However, a high level of turbidity and small oily globules were noticed directly adjacent to and downwind of the south discharge pipe to the SWB. This discharge is for the noncontact refinery wastewater. Precautionary booms have been installed in the SWB adjacent to the north and south discharge pipes. A small oily sheen (approximately 2 feet by 2 feet) had accumulated at the corner of the southern boom. No evidence of oil was present at the north discharge pipe, which serves to drain surface water at the refinery. UNO-VEN representatives informed me that the high turbidity is from the hardness of the wastewater, and is primarily calcium and magnesium. Small amounts of oil does not pose a problem as long as it is isolated and removed.

The east SWB has met all of the closure conditions/requirements in the approved workplan. Similar closure activities are now underway at the northwest SWB.

UNO-VEN
Products

The UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761

OE 171-95

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Z 049 707 854

J. W. Branch
General Manager

RECEIVED
AUG 14 1995

August 11, 1995

OFFICE OF RCRA
WASTE MANAGEMENT DIVISION
EPA, REGION V

Mr. Todd Gmitro
Geologist
United States Environmental Protection Agency (U.S. EPA)
Region V, Mail Code HRP-8J
77 W. Jackson Blvd.
Chicago, IL 60604-3596

Reference: Stormwater Basin (SWB) Closure, UNO-VEN Refinery ILD 041 550 567
Subject: Report on Project Status

Dear Todd:

This provides a status report on the above referenced project through July 16, 1995. Primary topics of discussion are:

- Summary of work completed.
- Description of changes to the work plan.
- Project schedule status.
- Project cost to date.
- Review of analytical data.

SUMMARY OF WORK COMPLETED

Sludge removal, dewatering, and disposal are progressing as described in the Work Plan For Stormwater Basin Sludge Removal, Dewatering, And Disposal dated January 1995 (Work Plan). A few minor changes to the Work Plan have been incorporated and are described in this report.

The sludge dewatering arrangement and process is similar to that described in the Work Plan's Section 2.5 Dewatering Operations. A bituminous pad was added to the facilities to enhance dewatered sludge handling. The volume of lime used in the dewatering process was increased from that anticipated in attempt to improve sludge dewatering.

August 11, 1995

As of July 16, 1995, the East Basin was in final stages of cleaning. Sludge removal was complete, dike material removal was nearly complete, and rock wall and pond bottom washing was approximately half complete.

The 78" and 108" Storm Pond inlet pipes were dammed with sand bags. Two portable diesel engine driven pumps are positioned at grade near each of the two inlet pipes. Typically, one pump at each end runs continuously to handle normal flows. The second pump is available to assist during high flow conditions. Water is pumped to the Northwest Basin, from which it is pumped to the Refinery's wastewater treatment plant for treatment.

Before dewatering the East Basin, a diver installed plugs in the three culverts which connect the East and Northwest Basins. With these plugs and the inlet pipe dams in place, the East Basin was essentially removed from service. Draining of the basin for final sludge removal, cleaning, and dike material removal was then initiated.

As work progressed in the East Basin, sludge dredging work was initiated in the Northwest Basin. After most sludge was dredged from the Northwest Basin, dredging and dewatering activities were stopped. All efforts were then focused on final cleaning of the East Basin.

As of July 16, 1995, sludge removal and dewatering has surpassed the total project's estimated filter cake quantity by approximately 2%, for a total of 22, 629.79 units handled. Also as of July 16, dike material removal and disposal quantities have exceeded the estimated total project quantity. After the dike surface was initially cleaned by removing the top few inches of surface material, additional contamination became evident. Due to this contamination, removal of all dike surface material down to the dike's clay core was determined necessary. Therefore all dike surface material was removed to expose the clean gray clay dike core on all dikes in the East Basin. Clean replacement dike material has been stockpiled along the top of the dikes in several areas of the Stormwater Basin.

A significant volume of material at the north end of the East Basin also required removal. Initially this material was thought to be clean fill which could be left in place. Excavation revealed that all of this material required removal and disposal, up to the north end's rock face. Numerous boulders were uncovered in this area. No benefit can be realized by removal of these boulders so they will be washed and left in the basin.

Bottom material also is being removed from the east central portion of the East Basin. This material was thought to be the basin's rock bottom. However, cleaning in this area revealed an approximate 3' depression filled with rock and soil. This material is being excavated and removed. The exposed rock bottom and sides will be washed along with the remainder of the pond's bottom.



August 11, 1995

DESCRIPTION OF CHANGES TO THE WORK PLAN

Several minor modifications were made to the Work Plan during project execution. These changes were made to better accommodate actual site conditions encountered. These modifications were primarily implemented to improve safety and project results.

As mentioned previously, sandbags were placed in the 78" and 108" Storm Pond inlet pipes to block flow into the East Basin. Portable pump suction lines were then placed behind the sandbags and flow was pumped in temporary piping to the Northwest Basin. The Work Plan called for temporary dike construction around these pipes to create a sump in which pumps would be placed. Eliminating these collection sump areas by using sandbags in the pipes reduces the logistical problems associated with cleaning the small collection sump areas upon reactivation of flow to the East Basin.

Several on-site tests were conducted to determine the best method of cleaning loose material from the rock faces and pond bottom. Initially, a steam cleaner was tested; it provided marginal effectiveness. Since this method of cleaning did not appear to increase cleaning effectiveness, it was not a viable option due to increased safety concerns. Next, use of a hydroblaster was compared to use of 1.5" fire nozzles. This test indicated that a fire hose was more effective at removing material of concern from the basin's hard surfaces. In addition, a fire hose has less risk associated with its use compared to a hydroblaster. For cleaning of the pond bottom, a power sweeper attached to the front of a skid-steer is being used ahead of the fire hose rinses to enhance cleaning.

Boulders uncovered in the north end of the basin will be cleaned with fire hose rinses and left in the basin. No benefit would be realized by removing these large rocks from the basin.

Numerous fissures were encountered on the East Basin's bottom. The larger fissures appeared to be packed with gray clay. Where feasible, the clean clay will be left in the fissures. Visible contamination is being removed. Seepage is being allowed to drain from the fissures. Drainage is being enhanced by pumping of water from the fissures to the Northwest Basin.

PROJECT SCHEDULE

A Stormwater Basin Closure schedule was included on page 6-2 of the Work Plan. Portions of the work are currently up to 4 weeks behind scheduled completion dates, such as the East Basin dike replacement. The East Basin dike replacement was scheduled for completion on July 5. Unexpected conditions in this basin have resulted in expanded efforts and have delayed completion. The overall schedule remains valid. Completion of decontamination and ion still appears feasible by September 14, 1995. The project schedule will be reissued at a later date if necessary.

August 11, 1995

PROJECT COST

As presented in Section 7 of the Work Plan, estimated removal and disposal of solids costs were \$4,315,000. As of July 16, 1995, the actual cost is at \$5,387,000. The increased costs to date are primarily due to the use of union labor and due to the excess dike and bottom material discovered in the East Basin.

ANALYTICAL DATA SUMMARY

Throughout the project, UNO-VEN has been sampling the filter cake produced from the dredged sludge. Daily samples are collected and tested for moisture content. Periodic samples are collected and analyzed for benzene. The analytical data confirms that the filter cake is not a hazardous waste. The moisture content sampling confirms that the dewatering process is performing adequately and producing an acceptable level of dewatering.

If you have any questions, please do not hesitate to call.

Sincerely,



C.W. Harmon
Manager, Operations Environmental

CWH:jcm

cc: Bob Helton, UNO-VEN, Project Engineering
Scot D. Strassburg, P.E., Metcalf & Eddy, Inc.



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY

USEPA

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

July 24, 1995

C.W. Harmon
Manager, Operations Environmental
The UNO-VEN Company
UNO-VEN Refinery
135th Street and New Avenue
Lemont, Illinois 60439-3659

Re: 1978030004 -- Will County
UNO-VEN
Chicago Refinery
ILD041550567
Log No. C-417-M-3
Received: May 2, 1995
RCRA Closure

Dear Mr. Harmon:

This letter is in response to the document entitled "Work Plan for Temporary Storage of Stormwater Basin Closure Material at the Land Treatment Facility UNO-VEN Refinery, Lemont, Illinois dated May 1, 1995 and received by the Agency on May 2, 1995. This document was prepared and submitted by Geraghty & Miller, Inc. on behalf of the UNO-VEN Company. The subject submittal was reviewed as a closure plan modification request due to the fact that it requested to place nonhazardous sludge on the four land treatment areas prior to the final closure of these areas. The closure plan for the land treatment areas at the above-referenced facility is hereby approved subject to the following conditions and modifications:

1. Except as modified by the subject submittal and this letter, closure activities shall be carried out in accordance with the approval letter for closure plan Log No. C-417 dated August 31, 1988.
2. The sludge piles on the land treatment areas shall be inspected monthly and after each storm event with 1 inch rainfall in 24 hours.
3. UNO-VEN shall provide written notification to the Agency's Bureau of Land Permit Section within 7 days of the date that the last load of sludge has been placed on the landfarm.
4. UNO-VEN shall provide written notification to the Agency's Bureau of Land Permit Section within 7 days of the date that UNO-VEN completes grading the sludge as proposed in the closure plan modification request C-417-M-3.

5. UNO-VEN shall immediately provide verbal notification to the Agency's Bureau of Land Permit Section and Maywood Regional Office if sludge from the land farm is observed outside the boundaries of any of the four landfarm areas as identified on Figures 3 and 4 in the closure plan modification request C-417-M-3. Within 10 days of the date that sludge from the landfarm is observed outside the boundaries of any of the four landfarm areas, UNO-VEN shall provide a corrective action plan to the Agency's Bureau of Land Permit Section. UNO-VEN must receive Agency approval of the corrective action plan prior to its implementation.
6. UNO-VEN shall notify the Agency's Bureau of Land Permit Section upon completion of any corrective action activities on the landfarm.
7. UNO-VEN shall develop written inspection reports. These reports shall be completed each time the landfarm areas are inspected. The report format shall be such that the following information is clearly presented: the date of the inspection, inspector's name, the area inspected, the types of problems the inspector must look for, and whether any problems were noted. In addition, the report must identify date of any corrective action implemented to correct a problem. Copies of the inspection reports shall be maintained at the facility. The reports shall be made available to the Agency upon request.
8. UNO-VEN shall provide a written report to the Agency's Bureau of Land Permit Section within 30 days of the date that UNO-VEN completes grading the sludge as proposed in the closure plan modification request C-417-M-3. This report shall include the following items:
 - a. Scale drawings of each landfarm area that identify the horizontal and vertical extent of the sludge piles on each of the four landfarm areas, and the locations and directions of each of the photographs required below.
 - b. Photographs of the north, south, east, and west sides of each landfarm area taken before any of the sludge was applied.
 - c. Photographs taken of the north, south, east, and west sides of each landfarm area from the same locations as in item b) above, after the sludge is applied.
 - d. Photographs of those parts of the landfarm areas that UNO-VEN considers most susceptible to erosion.
 - e. A blank copy of the inspection report form that UNO-VEN will use during inspections of the landfarm areas.

9. UNO-VEN shall provide a written report to the Agency's Bureau of Land Permit Section within 30 days of the date that UNO-VEN completes any corrective action at the landfarm areas. This report shall include the following items:
 - a. A detailed description of the corrective action taken to remediate the release of sludge from the landfarm.
 - b. A detailed description of the actions taken to prevent this event from occurring again at the landfarm. These preventative actions must address not only the recently remediated areas, but also other locations at the landfarm that may exhibit similar problems in the future.
 - c. Scale drawings of each landfarm area that identify the extent of the sludge released from any of the four landfarm areas, and the locations and directions of each of the photographs required below.
 - d. Photographs of the release(s) of the sludge from the landfarm areas.
10. No additional sludge shall be placed on the landfarm after October 1, 1995.
11. The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5101 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Sec. 1). Therefore, any certification or engineering services which are performed for a closure plan in the State of Illinois must be done by an Illinois P.E.

Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, sec. 13.1 of the Illinois Professional Engineering Act.

12. The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

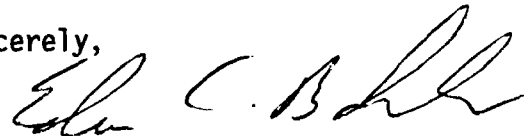
13. The attached form entitled RCRA Interim Status Closure and Post-Closure Care Plans General Form (LPC-PA18) must be completed and accompany all information submitted to the Agency associated with the closure activities described in this letter. As noted on this form, two copies must accompany the original of all submittals, so that the information

submitted can be distributed, as necessary to Agency personnel and regional offices. However, for closure activities involving land disposal units (surface impoundments, waste piles and landfills), the Agency requests that three copies be provided, as one must be forwarded to USEPA.

14. This facility must continue to meet the applicable requirements of 35 IAC - Subtitle G for those units identified on the latest Agency approved Part A application (i.e. the land treatment areas) because these units are not approved for closure herein.
15. The approval of this closure plan modification does not relieve UNO-VEN of the responsibility of providing financial assurance for the land treatment areas which are still subject to closure, in accordance with 35 IAC Part 725 Subpart H.
16. If the Agency determines that implementation of this closure plan fails to satisfy the requirements of 35 Ill. Adm. Code, Section 725.211, the Agency reserves the right to amend the closure plan. Revisions of closure plans are subject to the appeal provisions of Section 40 of the Illinois Environmental Protection Act.
17. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.
18. Approval of this closure plan modification in no way approves or disapproves the post-closure care permit application as it relates to the four land treatment areas.

Should you have any questions regarding this matter, please contact Robert Watson, P.E. at 217/524-3265.

Sincerely,



Edwin C. Bakowski, P.E.
Manager, Permit Section
Bureau of Land

ECB:WRW:bjh/sp/291X/1,4

~~JH~~
Attachment

cc: Tom Hall, Unocal
Gary Cipriano, Geraghty & Miller
USEPA Region V, -- George Hamper



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY *G. Harper*

US EPA

Mary A. Gade, Director
217-524-3300

2200 Churchill Road, Springfield, IL 62794-9276

July 14, 1995

Mr. Claud Harmon
Manager, Operations Environmental
UNO-VEN Company
UNO-VEN Refinery
135th Street and New Avenue
Lemont, IL 60439-3659

Re: 1978030004 -- Will County
UNO-VEN
Chicago Refinery
ILD041550567
RCRA Permit Log No: 162

Dear Mr. Harmon:

The Illinois Environmental Protection Agency has reviewed the Post-Closure permit application for the four land treatment units dated May 12, 1995 and received May 15, 1995 for the above referenced facility. A list of deficiencies identified during this initial completeness review is included in the attached Notice of Deficiency (NOD).

Each of the deficiencies must be addressed before the Agency can begin the technical review of your permit application. Your response must be submitted in quadruplicate and postmarked no later than August 31, 1995. The response should be in a format which allows incorporation of the new information into the appropriate sections of your application. To allow for a proper review of this new information, the location of the response to each deficiency should be identified in a list cross-referencing these items. Each revised page or drawing must have the revision date identified on them for tracking purposes.

A certification identical to that outlined at 35 Ill. Adm. Code 702.126 must accompany your submission. The original and three copies of the new information and certification should be submitted to the following address:

Illinois Environmental Protection Agency
Bureau of Land -- #33
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, IL 62794-9276

UNO-VEN: Completeness NOD
Page 2

If you have any questions regarding this letter, please feel free to call Rob Watson, P.E. of my staff at 217-524-3265.

Sincerely,



Edwin C. Bakowski, P.E.
Manager, Permit Section
Bureau of Land

ECB:WRW:uno-ven:comp-nod.1
JK

Enclosures

cc: George Hamper, USEPA Region V, w/enclosure
Kelley Moore, USEPA Region V, w/o enclosure
Tom Hall, UNOCAL

Completeness NOD
UNO-VEN, Chicago Refinery
RCRA Permit Log No: 162

GENERAL

1. The application should include a completed copy of the enclosed RCRA Decision Guide Checklist. This checklist must identify the locations of all of the relevant checklist items that are included in the application. In addition, the application should follow the format of the RCRA Decision Guide and Checklist.
2. Additional tabs need to be provided in the application to better define the various parts. This is especially necessary in Appendix I.
3. Separate plans, such as the closure and post-closure plans should have individual page numbering systems.

SECTION B

4. Legal Description: A written legal description of the facility should also be provided.
5. Injection wells: Figure B-3 identifies the locations of wells. It does not distinguish between injection and withdrawal wells
6. B-2a: Topographic Map: The following items are not discussed in the text or identified on the figures in Section B of the application:
 - Sewers: process/storm,
 - Loading/Unloading Areas,
 - Fire Control,
 - Flood Control & Drainage,
 - Run-on/Run-off Controls,
 - Solid Waste Units.
7. B-2b: Additional Map Requirements for Land Disposal Facilities: The application does not include this part of the Decision Guide and Checklist. All of the information required under this checklist item, such as the location of aquifers and groundwater flow rate and direction, is not provided or referenced in this Section.

SECTION C

8. C-1: Chemical & Physical Analyses: This Section refers to Section I, Appendix I-1 for chemical and physical analyses of the wastes. Specific pages and/or tables of the analyses should be referenced.
9. Actual laboratory analyses of the wastes applied to the LTA should be provided.
10. C-2: Waste Analysis Plan: This Section does not address the requirement for a waste analysis plan (WAP). A WAP will still be used during the post closure care of the LTA as well as during any corrective action that may be required at the facility. If this information is presented elsewhere in the application, it should be cross-referenced in Section C-2.
11. C-2g: Land Ban: Waste analysis requirements to meet the land disposal restrictions are not discussed.
12. C-3: Quality Assurance: Quality Assurance is not discussed.

SECTION G

13. G-6: Coordinated Agreements: The application does not include any documentation that the organizations listed on page G-12 have either agreed or refused to enter into an agreement with UNO-VEN.

SECTION H

14. H-1a: Job Title/Description: Page H-3 indicates that the job titles and descriptions for Environmental Operations employees is provided in Appendix H-1. This appendix is empty.

SECTION I

15. I-1d: Equipment Decontamination: Equipment decontamination procedures are not provided. Section 3.2.5 only states that appropriate decontamination procedures will be implemented.
16. I-1d(6)(a): Continuance of Treatment: The application does not include this item or address the issue of treatment after the LTA has been closed.

UNO-VEN: Completeness NOD
RCRA Log No. 162

17. I-2: Post Closure Plan: This Appendix (as well as other parts of the application) refers to 35 IAC Part 725. The correct reference is 35 IAC Part 724. Also, the correct reference on Page I-503 regarding the 10 maps of the LTA appears to be Appendix I-1.
18. I-2a: Inspection Plan: UNO-VEN should refer to the description of this requirement in the decision guide. The inspection plan provided is much too vague. Detailed descriptions of the inspection procedures need to be provided and when possible, specific parts of a system need to be identified. For example, how will the cover be inspected? Will the inspector view it from the inside of a moving vehicle or will he/she walk across the areas and around their perimeters? How will the run-on, run-off control system's integrity be inspected and what devices make up this system? What parts of the security system will be inspected, how and when will they be inspected? Finally, the rationale for determining the length of time between inspections is not discussed.
19. I-2c: Post-Closure Maintenance Plan: The Post-Closure Maintenance Plan provided is much too vague. UNO-VEN should refer to the description of this requirement in the decision guide. Specifically, the Post-Closure Maintenance Plan must describe the preventative and corrective maintenance procedures, equipment requirements, the material needs for the land treatment area and the rationale for determining the need for corrective maintenance activities. In addition, it is unclear why there is a separate Section 2.3, Routine Maintenance.
20. I-2d: Continued Land Treatment: The application does not include this item or address the issue of treatment after the LTA has been closed.
21. I-4, I-6: Closure & Post-Closure Cost Estimates: The cost estimates in Tables 7-1 and 9-1 are inconsistent with the financial assurance listed in Appendix I-3. The cost estimates appear to be too low. In addition, all unit costs and the sources for the unit costs need to be provided.

SECTION J

22. Other Federal Laws: UNO-VEN needs to provide documentation (if available) that it is in compliance with these other laws.

UNO-VEN: Completeness NOD
RCRA Log No. 162

SECTION K

23. K-2: Engineering Certification: An Engineering Certification is not provided.
24. K-3: Prior Conduct Certification: A Prior Conduct Certification is not provided.

SECTION L

25. A summary table of all SWMUs must be provided. It should include the SWMu's name, number, designation of the type of unit, if there has been a release, and the constituents released if known.
26. Engineering drawings for each SWMU must be provided if they are available.



Draft

**ENSR Consulting
and Engineering**

740 Pasquinelli Drive
Westmont, IL 60559
(708) 887-1700
FAX (708) 850-5307

June 27, 1995

ENSR Proposal No: 6941-A61

Mr. Claude Harmon
The UNO-VEN Company
3850 North Wilke Road
Arlington Heights, IL 60004

SUBJECT: Proposal to Provide Services for Closure Verification of the Stormwater Basin
at the UNO-VEN Refinery, Lemont, Illinois

Dear Claude:

ENSR Consulting and Engineering (ENSR) is pleased to submit this proposal to provide services related to verification of a RCRA closure of the stormwater basin (SWB). Specifically, these services will include collection and analysis of SWB surface water samples, risk assessment, and preparation of a closure report. This proposal has been prepared to meet the requirements of the Modified Stormwater Basin RCRA Closure Plan (ENSR Document No. 6941-022-660-F, dated January 1994; the Closure Plan approval letter (issued by U.S. EPA Region V to UNO-VEN on May 31, 1994); and the Work Plan for Stormwater Basin Sludge Removal, Dewatering, and Disposal (ENSR Document No. 6941-029-221).

This following text presents ENSR's proposed scope of work, schedule, and budget for performing closure verification of the SWB.

SCOPE OF WORK

The scope of work presented in this proposal consists of the following four tasks:

- Task 100 - Surface Water Sampling and Analysis
- Task 200 - Risk Assessment
- Task 300 - Closure Report
- Task 810 - Project Management / Administration

The following text describes each task related to the proposed scope of work.

June 27, 1995
Mr. Claude Harmon
Page 2

Task 100 - Surface Water Sampling and Analysis

This task is separated into two subtasks, Task 110 - Surface Water Sampling and Task 120 - Sample Analysis.

Task 110 - Surface Water Sampling

ENSR will collect 12 surface water samples from the SWB: in accordance with requirements of the U. S. EPA May 24, 1994, Modified Closure Plan approval letter; at the same locations specified in the Risk Assessment and Closure Verification Sampling Report dated May 25, 1993; and in accordance with the Quality Assurance Project Plan (QAPP) included as Appendix E of the Closure Plan. Table 1 presents a summary of the surface water sampling and analysis program. Surface water samples are being collected and analyzed to verify that following closure activities, surface water quality meets risk assessment health-based cleanup objectives for clean closure. Additionally, the results will be used to verify that the residual risk of SWB surface water does not exceed the baseline risk calculated from surface water data from the previous round of surface water sampling conducted in February 1993.

SWB surface water verification samples will be collected from eight locations in the East Basin and four locations in the Northwest Basin. Sample locations indicated on Table 1 are identical to those used during collection of water samples in February 1993. Sample locations are based on a grid system which divides the SWB into cells measuring 50 square feet each. Grid east-west and north-south baselines are as described in the Modified Closure Plan.

Since UNO-VEN maintains an average operating depth of approximately 7 feet for SWB waters, ENSR will obtain representative samples of SWB water by collecting samples at a depth of approximately 3 feet. ENSR field staff will collect samples with the aid of a 17-foot long aluminum row boat to be supplied by UNO-VEN. A Masterflex portable pump equipped with silicon tubing will be used to collect samples from the desired depth. A Masterflex pump is a portable battery-driven peristaltic pump which eliminates contact between the pumping mechanism and the sample medium. The Masterflex pump tubing will be attached to a 2-inch diameter polyvinyl chloride (PVC) well casing which will have a measured marking point of 3 feet from the tube anchor point. The PVC well casing will be inserted to the marking point and sample containers will be filled directly from the tubing discharge of the Masterflex pump. New tubing sections will be used at each sample

June 27, 1995
Mr. Claude Harmon
Page 3

location to eliminate the potential for carryover of chemical constituents of concern between sample points.

As indicated on Table 1, quality control and quality assurance samples will include field blanks (rinsate), trip blanks, and duplicate samples. Field blanks will be prepared by drawing distilled/deionized water through the masterflex pump and tubing and filling sample containers. In accordance with the QAPP, a field blank will be collected once per day or per twenty samples collected. One duplicate sample will be collected per every ten surface water samples collected. Trip blanks of distilled water prepared by the laboratory will accompany all volatile sample shipping containers.

Following collection, surface water sample containers will be placed in a cooler and chilled by covering with bags of ice prior to preparation for transport to the laboratory subcontractor. ENSR field staff will record all pertinent sampling data in the field log notebook and on chain-of-custody forms to accompany water samples to the laboratory.

Task 120 - Laboratory Analysis

The collected surface water samples will be sent under chain-of-custody by courier to National Environmental Testing Laboratories, Inc, (NET) of Bartlett, Illinois. The samples will be analyzed for volatile organic compounds (U. S. EPA Method 8240), semivolatile organic compounds (Method 8270), and for total metals using methods described in Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods (SW-846). Total metals analyses will include testing for arsenic, barium, hexavalent and trivalent chromium, lead, mercury, nickel, selenium, and vanadium.

Task 200 - Risk Assessment

In accordance with U.S. EPA requirements, ENSR will conduct a risk assessment as part of the demonstration/verification of Clean Closure. The surface water within the SWB is the medium of concern that will be evaluated in the risk assessment. Both a current industrial and future residential scenario will be evaluated in the risk assessment. The industrial worker will be evaluated for exposure through incidental ingestion and incidental dermal contact. For the future resident, the applicable exposure pathways will be incidental ingestion and incidental dermal contact through swimming in the SWB surface water. Exposure parameters will be determined using U.S. EPA guidance, such as the Risk Assessment Guidance for Superfund (U.S. EPA, 1989). As stated in U.S. EPA's letter (May 31, 1994), the target lifetime cancer risk goal will be 1×10^{-6} for each carcinogen, with a

June 27, 1995
Mr. Claude Harmon
Page 4

cumulative cancer risk not to exceed 1×10^{-5} . The cumulative Hazard Index goal will be 1.0 for noncarcinogens.

The results of the risk assessment will be included in the subsequent closure report task.

Task 300 - Closure Report

This task is separated into two subtasks, Task 310 - Draft Closure Plan and Task 320 - Final Closure Plan.

Task 310 - Draft Closure Report

ENSR will prepare a Draft Closure Report for submittal to UNO-VEN for review and comment. The draft closure report will describe surface water sampling procedures and results and incorporate the results of the risk assessment (Task 200). ENSR will also prepare a revised Part A application and statement of the status of the SWB after closure. Information for the revised Part A is assumed to be available from the Part B Application prepared/under preparation for the Land Treatment Area.

As indicated by UNO-VEN, the professional engineer certifying closure will prepare a separate report which will be included as an appendix to the closure report. The separate P.E. report will include the items related to construction management and oversight listed in Section 5.3 (Certification and Closure Documentation Report) of the Work Plan for Stormwater Basin Sludge Removal, Dewatering, and Disposal. This will include items such as, photographic logs of closure activities, a chronology of closure activities and dates of important project milestones, summary of closure costs, results of total benzene analysis of dewatered sludge, and a description of any deviations made from the approved sludge removal work plan.

The Closure report will also be prepared to meet the requirements of Section 12.0 of the Modified Closure Plan with one exception: results of hydrogeologic evaluations will not be included since the U.S. EPA no longer considers the SWB to be a potential source area impacting groundwater.

Task 320 - Final Closure Report

ENSR will incorporate written and verbal comments received from UNO-VEN, finalize the closure report, and deliver it to UNO-VEN for submission to U. S. EPA Region V for review and approval. To complete this task, ENSR will meet with UNO-VEN to review and discuss

June 27, 1995
Mr. Claude Harmon
Page 5

comments. For cost estimation purposes, we have assumed that costs to finalize the closure report will be approximately 25% of costs to draft the report; however, this may vary depending on the scope of UNO-VEN's comments.

Task 810 - Project Management/Administration

During this task, Gordon Ferguson, the ENSR Project Manager will direct the technical, scheduling, and financial performance of the proposed project to ensure that UNO-VEN's expectations regarding project schedule and budget are met. ENSR will keep UNO-VEN informed as to the project schedule and budget by providing monthly status reports in a cover letter to accompany monthly invoices for project charges issued to Mr. Claude Harmon of UNO-VEN. This task also includes labor hours and direct costs for ENSR clerical staff to track accumulated project costs and to provide UNO-VEN with detailed back-up of all invoiced project charges.

SCHEDULE

ENSR will schedule a meeting with UNO-VEN to discuss the project schedule upon receipt of your authorization to proceed. Collection of surface water verification samples can be completed within a single day, once cleaning of SWB side walls has been completed and the SWB is refilled to operating depth. Laboratory results of samples should be completed within 2 weeks of the completion of field work. Risk assessment activities will require 1.5 weeks to complete. Preparation of the draft closure report can be completed within 2 weeks after completion of the risk assessment. ENSR will finalize the closure report within 3 days of receipt of UNO-VEN's comments.

BUDGET

ENSR proposes to complete the scope of work on a time and materials basis in accordance with the recent amendment to the existing ENSR/UNO-VEN Contract (C-9342) for an estimated cost of \$ 29,850 (See Table 1).

Cost assumptions for the estimated budget presented above include:

- UNO-VEN will provide a separate, photocopy-ready report to ENSR prepared by the engineer certifying SWB closure. This separate report will include information related to construction management and oversight of closure activities.

June 27, 1995
Mr. Claude Harmon
Page 6

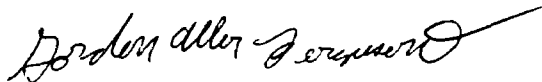
- ENSR will be provided with a copy of the most recent Part B application for the Land Treatment Area, to facilitate preparation of a revised Part A application.
- ENSR will receive one set of comments from UNO-VEN on the draft closure report and risk assessment. Any costs for responding to U.S. EPA comments or participation in agency meetings are not included.

AUTHORIZATION

Please sign and return the attached Acceptance of Proposal form as our authorization to proceed with this study.

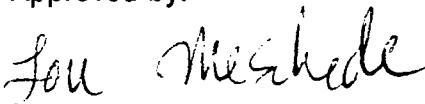
We appreciate the opportunity to offer this proposal and look forward to providing continued services for the successful closure of the stormwater basin.

Sincerely,



Gordon Allier Ferguson
Project Manager

Approved by:



Louis H. Meschede
Manager, Environmental Management

GAF/kw

Reference No. 95-06-W227

Attachments

cc: B. Helton/UNO-VEN
J. Barbato/ENSR



Acceptance of Proposal No. 6941-A61

Attention: Gordon Aller Ferguson

Dated June 27, 1995

The above scope of services and costs (\$29,850) are hereby accepted. ENSR Consulting and Engineering is authorized to perform the services as specified in accordance with the terms and conditions of Contract C-9342 (as amended).

Signature: _____

Name: _____

Title: _____

Company: _____

Date: _____

TABLE 1**Summary of Surface Water Sampling and Analysis Program**

Sample Location¹	Sampling Depth (ft)	VOCs Method 8240	SVOCs Method 8270	Total Metals²
1C	3	1	1	1
3D	3	1	1	1
7C	3	1	1	1
8F	3	1	1	1
12B	3	1	1	1
15E	3	1	1	1
18E	3	1	1	1
19B	3	1	1	1
2M	3	1	1	1
6M	3	1	1	1
9K	3	1	1	1
10N	3	1	1	1
Field Blank (Rinsate)	--	1	1	1
Trip Blank	--	1	0	0
Sample Duplicate	3	2	2	2
TOTALS	--	16	15	15
¹ Sample locations correspond to previously established sample grid locations indicated on Figure 2-1 of Risk Assessment and Closure Verification Sampling Report, May 1993.				
² Metals analyses will include arsenic, barium, hexavalent and trivalent chromium, lead, mercury, nickel, selenium, and vanadium.				

TABLE 2

**Cost Estimate Breakdown
Stormwater Basin Closure Verification
ENSR Proposal No. 6941-A61**

Task No.	Task Name	Labor Costs (\$)	Other Direct Costs (ODCs)	Totals
100	Surface Water Sampling and Analysis	\$1,350	\$9,200 ¹	\$10,550
200	Risk Assessment	7,950	1,100	9,050
310	Draft Report	5,400	800	6,200
320	Final Report	1,900	350	2,250
810	Project Management/ Administration	1,600	200	1,800
Totals		\$18,200	\$11,650	\$29,850
¹ ODCs for Task 100 include \$8,350 in laboratory analysis fees.				

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
Z 049 707 882

UNO-VEN
Products

The UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761

OE 121-95

June 22, 1995

Mr. Todd Gmitro
Geologist
United States Environmental Protection Agency (U.S. EPA)
Region V, Mail Code HRP-8J
77 W. Jackson Blvd.
Chicago, IL 60604-3596

**Stormwater Basin (SWB)
Closure, UNO-VEN Refinery
ILD 041 550 567**

Dear Todd:

This is to confirm the agreement reached at your June 9, 1995 site visit for the referenced project. While you were on-site a test was conducted to compare the effectiveness of a hydroblaster to a 1.5" fire hose for cleaning hard surfaces (rock face, concrete structures) associated with the SWB closure. The results of the test indicated that the fire hose is more effective at removing material of concern.

Therefore, in lieu of hydroblasting hard surfaces as stated in paragraph 2.6 of the "Work Plan for SWB Sludge Removal, Dewatering, and Disposal", fire hoses will be used. In addition to being more effective, the use of fire hoses will significantly reduce safety risks involved with this aspect of the project.

If there are questions or additional information required please don't hesitate to contact me at (708) 257-4450. Thank you for your cooperation.



C. W. Harmon
Manager, Operations Environmental

cc: D.W. Denton
R.E. Helton
N.J. Nedeau

June 7, 1995

Rob Watson
Illinois Environmental Protection Agency
Division of Land Pollution Control, MC33
2200 Churchill Road
Springfield, IL 62794

RECEIVED

JUN - 9 1995

Re: UNO-VEN Refinery, Lemont, Illinois. ILD041550567.
Log No. C-417-M3
RCRA Closure File

PERMIT SECTION

Dear Rob:

Geraghty & Miller is submitting the enclosed RCRA Interim Status Closure and Post-Closure Care Plans General Form (General Form) on behalf of The UNO-VEN Company. The General Form is to accompany the closure plan modification request entitled "Work Plan for Temporary Storage of Stormwater Basin Closure Materials, at the Land Treatment Facility, UNO-VEN Refinery, Lemont, Illinois" which was submitted on May 1, 1995. The enclosed form includes both an owner/operator certification and certification by a registered engineer per your request to Mr. Claude Harmon with UNO-VEN earlier this week.

The UNO-VEN Company appreciates your prompt attention to this urgent matter. Please contact Mr. Claude Harmon of UNO-VEN at (708) 257-4450 or (708) 818-7254 if you have any questions about the enclosed General Form.

Sincerely,

GERAGHTY & MILLER, INC.



Gary Cipriano, CPG
Principal Hydrogeologist/Project Manager

cc:

Mr. Claude Harmon w/enclosure

G:\PROJECT\UNOVEN\CI0395.001\SWB\FORMCOV.DOC\gsc



RCRA INTERIM STATUS CLOSURE AND POST-CLOSURE
CARE PLANS GENERAL FORM
LPC-PA18

THIS FORM MUST ACCOMPANY ANY RCRA INTERIM-STATUS CLOSURE AND/OR POST-CLOSURE CARE PLANS OR MODIFICATION REQUEST SUBMITTED TO THE DIVISION OF LAND POLLUTION CONTROL. THE ORIGINAL AND TWO COPIES OF ALL DOCUMENTS SUBMITTED MUST BE PROVIDED.

FACILITY IDENTIFICATION (Information about the facility where the units are located which are addressed in this closure plan)

Name: UNO-VEN Refinery County: Will
Street Address: 135th St. and New Ave. Site # (IEPA): 1 9 7 8 0 3 0 0 0 4
City: Lemont Site No. (USEPA): I L D 0 4 1 5 5 0 5 6 7

OWNER INFORMATION

Name: The UNO-VEN Company

Mailing Address: 135th St. and New Ave.
Lemont, Illinois 60439-3659

Contact Name: Mr. Claude Harmon
Contact Title: Manager, Operations Env.
Phone #: (708) 257-7761

OPERATOR INFORMATION

Name: The UNO-VEN Company

Mailing Address: 135th St. and New Ave.
Lemont, Illinois 60439-3659

Contact Name: Mr. Claude Harmon
Contact Title: Manager, Operations Environmental
Phone #: (708) 257-7761

TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

☐ Original (New) Closure Plan
☐ Original (New) Post-Closure Plan
☐ Response to Disapproval letter
☒ Modification Request
☐ Additional Information for / / Submittal (Log No. if known)

Log No. of Most Recent Agency Approval/Disapproval Letter C417-M2
Date of Most Recent Agency Approval/Disapproval Letter 12/14/93

DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted)

Closure Plan Modification Request.

LIST OF DOCUMENTS SUBMITTED (identify all documents in this submittal, including the cover letter)

1. Work plan for temporary storage of stormwater basin closure material at the
Land Treatment Facility, UNO-VEN Refinery, Lemont, Illinois. 2. Cover
letter to Document 1 dated May 1, 1995 addressed to Mr. Rob Watson, IEPA.

UNITS UNDERGOING CLOSURE (please identify what type of units are addressed in the plan, their capacities and whether they are on the RCRA Part A for the facility)

Unit	Unit Code	Number of Units Closing	Capacity	On Part A (Y/N)
Storage:				
Container (barrel, drum, etc.)	S01	<u> </u>	<u> </u>	<u> </u>
Tank	S02	<u> </u>	<u> </u>	<u> </u>
Waste Pile	S03	<u> </u>	<u> </u>	<u> </u>
Surface Impoundment	S04	<u> </u>	<u> </u>	<u> </u>

UNITS UNDERGOING CLOSURE (continued)

<u>Unit</u>	<u>Unit Code</u>	<u>Number of Units Closing</u>	<u>Capacity</u>	<u>On Part A (Y/N)</u>
Treatment:				
Tank	T01	_____	_____	_____
Surface Impoundment	T02	_____	_____	_____
Incinerator	T03	_____	_____	_____
Other (explain)	T04	_____	_____	_____
Disposal:				
Landfill	D80	_____	_____	_____
Land Application	D81	<u>1</u>	<u>13.5 acres</u>	<u>Yes</u>
Surface Impoundment	D83	_____	_____	_____

CERTIFICATION AND SIGNATURE (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126. Any submittal involving engineering plans, specifications and calculations as defined in the Illinois Professional Engineering Act and 68 IAC 1380 must be signed and certified by an Illinois registered professional.)

All closure plans, post-closure plans and modifications must be signed by the person designated below or by a duly authorized representative of that person:

Corporation - By a principal executive officer of at least the level of vice-president.
Partnership or Sole Proprietorship - By a general partner or the proprietor, respectively.
Government - By either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. is submitted with this application (a copy of a previously submitted authorization can be used).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner Signature: _____

Title: Manager, Operations Environmental

6/8/95
(Date)

Operator Signature: _____

Title: Manager, Operations Environmental

6/8/95
(Date)

Engineer Signature: _____
(if necessary)

Engineer Name: _____

Michael S. Maierle

Engineer Address: _____

35 E. Wacker Drive

Suite 1000

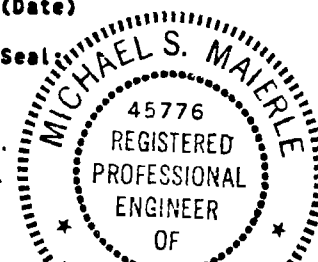
Chicago, Illinois 60601

Engineer Phone No.: _____

(312) 263-6703

6-7-95
(Date)

Engineer Seal:



JM:sf/sp/1243r,1-2

This Agency is authorized to release this information under Illinois Revised Statutes, 1979, Chapter 111, Section 1039. Disclosure of this information is required under that Section. Failure to do so may prevent this form from being processed and could result in your application being denied. This form has been approved by the Forms Management Center.

C-417-M-3

UNO-VEN
Products

cc: MacLeod
USE

The UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761

J101
W120

OE 108-95

June 2, 1995

Rob Watson
Illinois Environmental Protection Agency (IEPA)
Division of Land Pollution Control
2200 Churchill Road
Springfield, IL 62794

UNO-VEN Refinery, Lemont, IL
ILD 041550567, Log No. C-417
RCRA Closure File

Dear Rob:

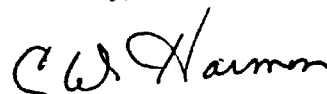
As we have discussed, UNO-VEN is extremely interested in utilizing an on-site Landfarm for placement and disposal of material removed from a stormwater basin currently being clean closed under RCRA regulation. To that end, a work plan for placement of these materials in the landfarm was submitted to IEPA May 1, 1995.

This is an offer to meet to discuss the work plan approval process and answer questions or provide additional information, if needed, in order to expedite work plan approval.

The approval of this work plan is important to UNO-VEN, and its owners, not only because it is cost effective, but it would also eliminate the unnecessary use of landfill space. Wednesday June 7 would be a convenient date for us, please advise of your availability.

Thank you for your attention.

Sincerely,



C. W. Harmon
Manager, Operations Environmental

CWH:plm

cc: C.C. Barnard
D.W. Denton
N.J. Nedean

RECEIVED

JUN - 5 1995

IEPA
PERMIT SECTION

C-417-M-3

cc: Macquod
Unocal Corporation
2300 Barrington Road, Suite 500
Hoffman Estates, Illinois 60195
Telephone (708) 310-6806
Facsimile (708) 310-6890

JLH
JLK
C-417

UNOCAL 76

**Via Certified Mail
Return Receipt Requested**

May 1, 1995

Thomas I. Hall
Staff Geologist
Corporate Environmental
Remediation & Technology

Mr. Rob Watson
Illinois Environmental Protection Agency
Manager Corrective Action Unit
Permit Section
Bureau of Land
2200 Churchill Road, P.O. Box 19276
Springfield, IL 62794-9276

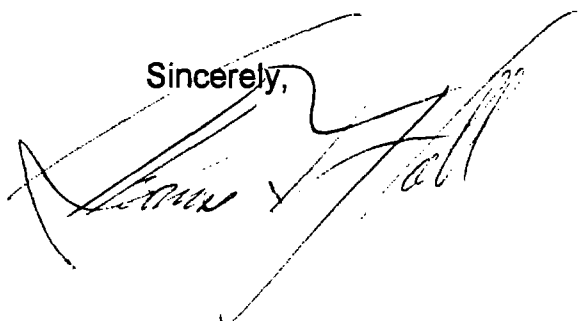
**Re: 1978030004 -- WILL COUNTY
UNO-VEN REFINERY
ILD041550567
LOG NO. C-417-M-2
RCRA CLOSURE FILE**

Dear Mr. Watson:

I have been informed by our consultant, Geraghty & Miller, Inc., that they will be unable to complete the Post Closure/Care permit application for the Lemont Refinery land treatment facility by the due date of April 28. I wish to request a two week extension for submitting the application to your office. Geraghty & Miller has assured me that it will be in your office by May 12, 1995

I thank you for your consideration of this matter. If you have any comments or questions concerning this project and the time extension, please feel free to contact me at (708) 310-6806, or Mr. Gary Cipriano of Geraghty and Miller at (312) 263-6703.

Sincerely,



cc: C. Harmon, UNO-VEN
G. Cipriano, Geraghty & Miller, 35 E. Wacker Dr., Suite 1000, Chicago, IL 60601
J.H. Garretson
file

RECEIVED
MAY - 3 1995
IEPA - DOL
PERMIT SECTION

C-417-M-2

Unocal Corporation
2300 Barrington Road, Suite 500
Hoffman Estates, Illinois 60195
Telephone (708) 310-6806
Facsimile (708) 310-6890

CC: [illegible]
USEP, [illegible]

JHC
W/RW



**Via Certified Mail
Return Receipt Requested**

March 27, 1995

Thomas I. Hall
Staff Geologist
Corporate Environmental
Remediation & Technology

Mr. Rob Watson
Illinois Environmental Protection Agency
Manager Corrective Action Unit
Permit Section
Bureau of Land
2200 Churchill Road, P.O. Box 19276
Springfield, IL 62794-9276

**Re: 1978030004 -- WILL COUNTY
UNO-VEN REFINERY
ILD041550567
LOG NO. C-417-M-2
RCRA CLOSURE FILE**

RECEIVED

MAR 29 1995

**EPA - BOL
PERMIT SECTION**

Dear Mr. Watson:

Pursuant to our telephone call of March 20, Unocal was granted verbal approval by your office for a time extension on submitting the RCRA Part B post-closure permit application associated with the four land treatment areas at the UNO-VEN refinery in Lemont, Illinois. As we discussed, the submittal of the post-closure permit is contingent on completing site characterization activities at the landfarm, and preparation of the Closure Plan. The land treatment facility characterization report will be mailed to your office on March 31, 1995. Subsequently, the land treatment facility Closure Plan will be submitted as part of the RCRA Part B post-closure permit application on April 28, 1995.

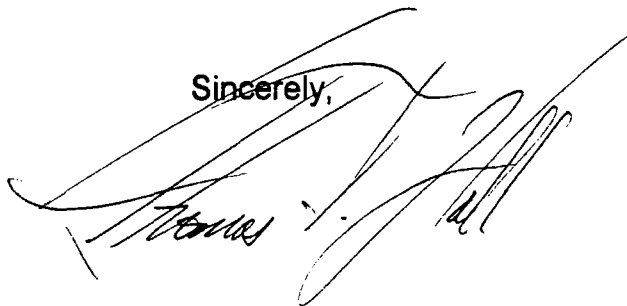
The original landfarm characterization scope of work contained a contingency for additional field activities if certain conditions were encountered during the first soil sampling event. Two additional sampling episodes were needed to satisfy the objectives of the landfarm characterization study. The additional work and subsequent evaluation of the soil sampling results added significant time to the schedule for completing the land treatment area characterization study report. The RCRA Part B post-closure permit application, which includes the land treatment facility Closure Plan,

Mr. Rob Watson
March 27, 1995
Page 2

is dependent on the findings of the landfarm characterization study. As a result, the submittal date for the permit application was changed to accommodate the new schedule for completing the land treatment facility characterization study.

If you have any comments or questions concerning this project and the time extension, please feel free to contact me at (708) 310-6806, or Mr. Gary Cipriano of Geraghty and Miller at (312) 263-6703.

Sincerely,

A handwritten signature in black ink, appearing to read "Thomas J. Miller", written over the word "Sincerely,".

cc: C. Harmon, UNO-VEN
G. Cipriano, Geraghty & Miller
J.H. Garretson
file



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

January 31, 1995

REPLY TO THE ATTENTION OF:

C.W. Harmon, Manager
Operations Environmental
The UNO-VEN Company
UNO-VEN Refinery
135th & New Avenue
Lemont, Illinois 60439-3659

HRP-8J

Re: Stormwater Basin Sludge
Removal

Dear Mr. Harmon:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the document entitled, "Work Plan for Stormwater Basin Sludge Removal, Dewatering, and Disposal", dated January 13, 1995, for the UNO-VEN Refinery in Lemont, Illinois. This document was submitted according to Condition 9. of Enclosure #1 to the U.S. EPA's May 31, 1994 Modified Closure Plan approval letter. The U.S. EPA hereby approves this Workplan, with the following conditions:

1. The Closure Documentation Report must contain sufficient generator waste analysis information to identify any hazardous wastestreams generated during the closure activities. This is necessary to ensure proper disposal of the wastestreams and to document that hazardous waste(s) was not stockpiled on site. ✓

Refer to 40 Code of Federal Regulations (40 CFR) Part 261, Subpart C for characteristics of hazardous wastes; and 40 CFR Part 261, Appendixes I and II for representative sampling methods, and the Toxicity Characteristic Leaching Procedure (TCLP). If a total analysis of a specific wastestream indicates that a Toxicity Characteristic (TC) maximum concentration for a constituent could not possibly be exceeded or that the constituent is not present, then analysis of the TCLP extract is not necessary; and

2. At the mid-point of closure activities please provide a brief progress report to the U.S. EPA. This date is anticipated to be August 1, 1995. This report should include a description of work performed; a summary of any project changes, problems, and modifications; any changes in personnel; projected changes in the closure schedule; and copies of any finalized analytical or monitoring data. ✓

As discussed in our meeting on January 25, 1995, I will contact you prior to any U.S. EPA site visit during the closure activities. I anticipate site visits for the following tasks: East Basin dredging, sludge removal, and



Printed on Recycled Paper

hydroblasting; Northwest Basin dike wall removal; and final closure verification. If you have any questions regarding this letter, I may be reached at (312) 886-5909.

Sincerely,

A handwritten signature in cursive script, appearing to read "Todd Gmitro".

Todd Gmitro, Geologist
IL\MN\WI Section
RCRA Permitting Branch

cc: D. Clay, IEPA
L. Meschede, ENSR

January 31, 1995

C.W. Harmon, Manager
Operations Environmental
The UNO-VEN Company
UNO-VEN Refinery
135th & New Avenue
Lemont, Illinois 60439-3659

HRP-8J

Re: Stormwater Basin Sludge
Removal

Dear Mr. Harmon:

The United States Environmental Protection Agency (U.S. EPA) has completed its review of the document entitled, "Work Plan for Stormwater Basin Sludge Removal, Dewatering, and Disposal", dated January 13, 1995, for the UNO-VEN Refinery in Lemont, Illinois. This document was submitted according to Condition 9. of Enclosure #1 to the U.S. EPA's May 31, 1994 Modified Closure Plan approval letter. The U.S. EPA hereby approves this Workplan, with the following conditions:

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hydroblasting; Northwest Basin dike wall removal; and final closure verification. If you have any questions regarding this letter, I may be reached at (312) 886-5909.

Sincerely,



Todd Gmitro, Geologist
IL\MN\WI Section
RCRA Permitting Branch

cc: D. Clay, IEPA
L. Meschede, ENSR

John K. Bassett
General Manager

January 13, 1995

Mr. Todd Gmitro, Geologist
United States Environmental Protection Agency
(U.S. EPA)
Region 5 - Mail Code HRP-8J
77 West Jackson Blvd.
Chicago, IL 60604-3590

**Stormwater Basin (SWB) Closure, UNO-VEN
Refinery ILD 041 550 567**

Dear Todd:

Enclosed please find two (2) copies of a document entitled "Work Plan for Stormwater Basin Sludge Removal, Dewatering, and Disposal" (Work Plan) for the UNO-VEN Company Refinery in Lemont, IL. This Work Plan fulfills the obligations outlined in U.S. EPA's May 31, 1994 Modified Closure Plan Approval letter in Enclosure #1 Section 9.

As agreed, a meeting, to be held at U.S. EPA's office, is planned for Wednesday January 25 at 1:30 p.m. to discuss the Work Plan and address any questions you might have.

If there is a problem with the meeting schedule or if additional information is required prior to January 25 please don't hesitate to contact me. Your cooperation is appreciated.

Sincerely,



C. W. Harmon, Manager
Operations Environmental

CWH:plm

Attachments(2)

cc\w\o\att: R.E. Helton, D. G. Jacob, N. J. Nedeau



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY

USEPA

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

October 24, 1994

Mr. Claud Harmon
UNO-VEN Company
3850 North Wilke Road
Arlington Heights, IL. 60004

Re: 1978030004 -- Will County
UNO-VEN Refinery
ILD041550567
C-417-M-2
Date Received: August 8, 1994
RCRA-Closure File

Dear Mr. Harmon:

The revised Landfarm Site Characterization Scope of Work (SOW) dated August 5, 1994, submitted by UNOCAL and prepared by Geraghty & Miller, INC. has been reviewed by the Agency. The SOW is approved subject to the special conditions identified below.

In addition, the August 1, 1994 request for an extension of the time for the submittal of your Post Closure Care permit application is approved. The Post Closure Care Permit application must be submitted by February 27, 1995.

SPECIAL CONDITIONS

1. In addition to the grid points specified on page 5 of the SOW, the following locations as identified on Attachment 6 must be incorporated into the soil sampling plan:

<u>Area</u>	<u>Grid points</u>
I	I-12, I-32, I-35, I-43,
II	II-05, II-15, II-17 II-27,
III	III-05,
IV	IV-11, IV-13

2. The soil in the intermittent stream shall be sampled at the three locations identified on Figure 1 in the SOW, at and a fourth location on the east side of the western access road.
3. All soil samples shall be analyzed for the "Skinner List" of parameters listed in Table 5 of the SOW.

4. All soil samples which will be analyzed for volatile organic compounds (VOCs) must be collected in accordance with Attachment 7 of the Agency's RCRA closure plan instructions. A copy of those procedures are attached to this letter.
5. All soil samples shall be analyzed individually (i.e., no compositing). Analytical procedures shall be conducted in accordance with Test Methods for Evaluating Solid Wastes, Third Edition (SW-846). When a SW-846 (Third Edition) analytical method is specified, all the chemicals listed in the Quantitation Limits Table for that method shall be reported unless specifically exempted in writing by the Agency. Apparent visually contaminated material within a sampling interval shall be included in the sample portion of the interval to be analyzed. To demonstrate a parameter is not present in a sample, analytical results must show a detection limit at least as low as the PQL for that parameter in SW-846 (Third Edition). For inorganic parameters, the detection limit must be at least as low as the RCRA Groundwater Detection Limits, as referenced in SW-846 (Third Edition) Volume 1A, pages TWO-29 and TWO-30, Table 2-15.
6. All samples which have a total concentration of any TCLP parameter greater than 20 times the regulatory level for that parameter at 35 IAC 721.124(b) must be analyzed per TCLP. For example, if the total concentration of lead is over 100 mg/kg in a sample, that location and depth must be analyzed for lead per the TCLP.
7. UNO-VEN shall submit a Landfarm Site Classification Report of the work performed under the SOW by January 27, 1994. This report must include the following, at a minimum:
 - copies of all actual laboratory reports,
 - all analytical data collected and the corresponding depths/sampling intervals,
 - summary tables of the analytical results,
 - a description of the soil sampling procedures and soil preservation/chain of custody methods,
 - the test methods which were used and the detection limits achieved,
 - a discussion of the project objectives and whether they were met,

UNO-VEN
Landfarm Characterization SOW
Page 3

- scale drawings which show the horizontal and vertical extent of any hazardous constituents outside of the four areas in the landfarm,
 - scale drawings which show the horizontal and vertical extent of any hazardous waste.
8. If soil contamination is detected at or below the water table, the Agency must be notified in writing within 15 days after such a discovery has been made and an investigation to determine if the groundwater in that zone has been impacted must be performed. A plan for this investigation, if necessary, must be submitted within sixty (60) days after the date that the analytical results are received which indicate that soil contamination extends to the water table.

Should you have any questions concerning this letter, please contact Rob Watson at 217-524-3300.

Sincerely,



Harry A. Chappel, P.E.
Hazardous Waste Branch Manager
Permit Section, Bureau of Land

HAC:WRW *JMK*
Attachment

cc: George Hamper, USEPA Region V
Tom Hall, UNOCAL

ATTACHMENT

Soil Volatile Sampling Procedures

Procedure:

- A. PREPARATION AND DECONTAMINATION OF SOIL SAMPLER (i.e. STAINLESS STEEL, BRASS, BRONZE, COPPER, etc.). An example of these samplers would be a shelby tube, split-barrel sampler with metal tube inserts or california sampler. These are only examples. There may be more types available. Also, the sample tube **must** be at least six inches long.

- *1. Wash tubing or sampler with hot water and a nonfoaming detergent.
2. Rinse with hot water.
- *3. Rinse with a solvent, such as hexane or acetone.
4. Rinse with very hot water to drive off solvent.
5. Rinse with deionized distilled water.
6. Air Dry
7. Store the sampler in aluminum foil until ready for use.
- * Consult the laboratory for specific recommendations.

B. SOIL SAMPLING FOR VOLATILE ORGANICS

1. Using a properly decontaminated sampler (refer to preparation and decontamination instructions), push or drive the sampler to obtain a representative soil sample.
2. **DO NOT** remove sample from sample tube in the field. The laboratory should remove the sample from the sampling tube.
3. Immediately add clay or other cohesive material (i.e. wetted bentonite) to the ends of the sample to eliminate head space, if necessary.
4. Cover both ends of the sampler with aluminum foil. If possible, cover the aluminum foil with a cap.
5. Put the sample in storage at 4 degrees centigrade immediately.
6. Transport the samples to the laboratory as soon as possible. Most laboratories require delivery within 24 hours of sampling.

NOTE: Soil samples which will be tested for volatile organic constituents cannot be composited because of the volatilization which would result from any compositing method.

AUG 02 1994

Mr. C.W. Harmon, Jr.
Manager, Marketing Environmental
The UNO-VEN Company
3850 North Wilke Road
Arlington Heights, Illinois 60004

HRP-8J

Re: Stormwater Basin (SWB)
Closure, ILD 041 550 567

Dear Mr. Harmon:

This letter is in response to your letter, dated July 22, 1994, regarding the meeting held on July 12, 1994, between representatives of the United States Environmental Protection Agency (U.S. EPA) and The UNO-VEN Company (UNO-VEN). The U.S. EPA has reviewed your letter, and concurs with your interpretation of the issues discussed at the meeting. These issues included clean closure demonstration criteria, the objective of removing all practical sludge, and the regulatory status of the sludge. However, the U.S. EPA has the following clarification regarding sludge in cracks or crevices: as a general performance objective, readily assessable, surficial sludge present in cracks or crevices in the bedrock should be removed, but deeper, lodged material would not have to be removed. A final approval of the sludge removal approach for clean closure will be made after review of the Sludge Removal Workplan.

The U.S. EPA hereby approves your request for a revised closure schedule. Closure activities must be completed by November 24, 1995. As specified in Condition 1. of the U.S. EPA modified closure plan approval letter, dated May 31, 1994, the closure certification and documentation report must be received within 60 days after completion of closure, or no later than January 23, 1996.

If you have any questions regarding this letter, please contact Todd Gmitro, of my staff, at (312) 886-5909.

Sincerely,

Gale R. Drush

for George J. Hamper, Chief
Illinois Section
RCRA Permitting Branch

cc: D. Clay, IEPA
L. Meschede, ENSR

HRP-8J\T. Gmitro\TG\6-5909\TDGMITRO\DRYCLOS.UVN\August 2, 1994

76
8/2/94

The UNO-VEN Company

76 Products

RECEIVED

JUL 28 1994

C.W. Harmon, Jr.
Manager, Marketing Environmental

OFFICE OF RCRA
Waste Management Division
U.S. EPA REGION V
8850 North Williams Road
Arlington Heights, IL 60004-1269

Telephone: (708) 818-7254
Fax: (708) 818-7491

July 22, 1994

Mr. Todd Gmitro
Geologist
United States Environmental Protection Agency (U.S. EPA)
Region 5 - Mail Code HRP-8J
77 West Jackson Blvd.
Chicago, Illinois 60604-3590

Re: Stormwater Basin (SWB)
Closure, UNO-VEN Refinery
ILD 041 550 567

Dear Todd:

This is to document the results of a meeting held on July 12, 1994, between representatives of the U.S. EPA and The UNO-VEN Company (UNO-VEN). Participants from U.S. EPA were George Hamper and Todd Gmitro, with Darrell Jacob, Claude Harmon and Lou Meschede representing UNO-VEN. The purpose of the meeting was to clarify U.S. EPA's approval conditions for the "Modified Stormwater Basin RCRA Closure Plan" (SWB Closure Plan), submitted by UNO-VEN to the U.S. EPA on December 22, 1993, and to discuss the schedule for closure of the SWB. The U.S. EPA approved the SWB Closure Plan in a letter to UNO-VEN dated May 31, 1994.

After introductions and a discussion of the objectives for the meeting, the first issue raised for clarification was clean closure demonstration criteria. U.S. EPA confirmed that additional sludge analytical data would not be required if removal of all practical sludge was accomplished. In addition, sludge lodged in cracks and crevices at the bottom and sides of the SWB would not have to be removed. This is based on there being no exposure pathway available for the sludge in the cracks and crevices once the SWB is placed back in service after closure.

The next item of discussion was the objective of removing "all practical sludge." It was determined that, along with the sludge in the SWB, contaminated loose material (i.e. stained rocks or rip rap) should be removed. Visually contaminated berm material will also be removed. Stained rock along the sides of a portion of the SWB does not have to be removed, but techniques for improving the appearance of the rock will be evaluated. It was agreed that removing all practical sludge and visually contaminated loose material, along with the surface water risk assessment, will be adequate for verifying clean closure of the SWB.

The next topic discussed was the regulatory status of the sludge currently in the SWB and the need to avoid creating additional Resource Conservation and Recovery Act (RCRA) regulated units during the sludge removal process. It was concluded that as long as the material continues to be non-hazardous there is no concern over creating additional RCRA regulated units during the removal process. This applies even though the non-hazardous material is being removed from a RCRA regulated unit. Other exemptions were considered, such as those allowed for containers and tanks and NPDES permits, but these are not applicable for handling non-hazardous waste.

The final item discussed for clarification was the implementation schedule for removal of all practical sludge. As allowed in U.S. EPA's SWB Closure Plan approval letter, all practical sludge removal is an option for obtaining clean closure. UNO-VEN has decided to pursue all practical sludge removal and as such presented a preliminary schedule (see attached schedule) for implementation of this option. After reviewing the preliminary schedule for sludge removal it was agreed that the approach and time frame for implementation were reasonable. The preliminary schedule as presented calls for closure activities to be completed by December, 1995. Therefore, please consider this a request for an extension to December, 1995, for completion and U.S. EPA final approval of SWB closure activities. As required in U.S. EPA's SWB Closure Plan approval letter and as noted in the attached schedule, a Sludge Removal Work Plan will be submitted to U.S. EPA for review and approval. The implementation schedule will be modified as specific information is developed, but extending completion of closure activities beyond December, 1995 is not anticipated.

UNO-VEN appreciates your attention and cooperation regarding this important project. If there are questions or additional information required, please don't hesitate to contact me. Please respond with your concurrence or comments at your earliest convenience.

Sincerely,



C. W. Harmon, Jr.

CWH:ms

Enclosure

cc: Cathy Barnard
Lee Erchull
Bob Helton
Darrell Jacob
Lou Meschede
Nick Nedeau
Andy Pollak

PRELIMINARY SCHEDULE FOR SWB DRY CLOSURE UNO-VEN LEMONT REFINERY

[illegible]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

DATE: 7-12-94
SUBJECT: UNO-VEN REFINERY CLOSURE MEETING
FROM: ⁷⁶Todd Gmitro, Geologist
TO: RCRA Files

On July 12, the U.S. EPA (George Hamper and Todd Gmitro) met with representatives of UNO-VEN and their consultant ENSR regarding closure issues for a surface impoundment at the UNO-VEN Refinery in Lemont, Illinois. Specifically, closure by treatment in place has only been partially successful, and closure by removal will now be conducted. Risk assessment, administrative, and technical issues regarding the removal action were discussed.

Dry closure (closure by removal) will be pursued in the months to come to finish closure of the unit. It was confirmed that: solids sampling would not be required if this was pursued; riprap around the berms and the clay itself would have to be removed to the point of all visible staining; all solids on the floor and sides of the impoundment would have to be removed via sandblasting or a jet wash; and all loose rock must be removed, but not necessarily all solid rock that is only marginally stained. UNO-VEN will be submitting a workplan in the near future detailing the engineering, management, and schedule for the removal project; and will send a letter confirming the conclusions reached at today's meeting.

Attachments: Meeting Agenda
Preliminary Schedule for Dry Closure

PRELIMINARY SCHEDULE FOR SWB DRY CLOSURE
UNO-VEN LEMONT REFINERY

[illegible]

THE UNO-VEN COMPANY

3850 North Wilke Road
Arlington Heights, Illinois 60004-1269
(Fax: 708/818-7491)

TO:TODD GMITRO**COMPANY:**US EPA**FAX:**312 - 353 - 4788**FROM:**CW Harmon**TEL:**708-818-7254**TOTAL PAGES:**2**COVER INCLUDED:**Y

#####

COMMENTS:ToddSuggested agenda for 7/12 meetingCharles**PRIVACY AND CONFIDENTIALITY NOTICE**

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If you receive this communication in error, please notify us immediately by telephone, and return the original message and documents to us at the above address via the United States postal service.

AGENDA
US EPA/UNO-VEN MEETING
JULY 12, 1994 10:00 AM.
STORMWATER BASIN CLOSURE

- **Introductions**
- **Clarification/Verification of May 31, 1994 Closure Approval Conditions**
 - **Clean Closure Demonstration Criteria**
 - **Objective Of Removing "All Practical Sludge"**
 - **Risk Criteria/Demonstration**
- **Schedule For Dry Sludge Removal**
 - **Evaluate Technical Issues**
 - **Basin Isolation Evaluation**
 - **RFP For Solids Removal**
- **Date For Risk Assessment Meeting**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

DATE: May 5, 1994

SUBJECT: UNO-VEN Refinery Meeting

FROM: Todd Gmitro
RPB-Illinois

TO: RCRA Files

On Thursday, May 5, 1994 Todd Gmitro, George Hamper, and Mario Mangino meet with representatives of UNO-VEN, Inc., and its consultant to discuss the applicable regulatory requirements necessary to achieve clean closure or delay of closure for a RCRA-regulated surface impoundment at its Lemont Refinery. Specific issues regarding the facility's recently submitted modified closure plan included: remaining risk levels and required additional risk assessments; affects of groundwater contamination on closure activities; and U.S. EPA draft comments on the modified closure plan.

It was concluded the U.S. EPA will finalize comments on the Modified Closure Plan (dated December, 1993) and specify requirements for a risk assessment which would demonstrate clean closure.

Enclosure: Meeting Agenda

Fax, dated 4-26-94 : EPA to ENSR

Fax, dated 5-2-94 : EPA to ENSR

Closure Plan approved w/ conditions on 5-31-94.

Post-It™ brand fax transmittal memo 7671		# of pages > 1
To T. GMITRO	From L. MESCHÉDE	
Co.	Co. ENSR	
Dept.	Phone # 708-887-1700	
Fax # 312-353-4788	Fax # 708-850-5307	

U.S. EPA Meeting Agenda
May 5, 1994 - 10:00 a.m.
Metcalf Federal Building - 8th Floor
Chicago, Illinois

RCRA Closure of Stormwater Basin (SWB) - UNO-VEN Lemont Refinery

I. Meeting objective: Reach consensus on applicable regulatory framework and associated requirements to achieve clean closure and/or continued, long-term operation of the SWB.

II. Regulatory Framework/Requirements for Closure/Continued Operation of SWB

- Closure by Removal
 - ✦ Acceptable risk levels
 - Source of contaminated groundwater not SWB; effect of contaminated groundwater inflow on closure; interrelationship of GMZ
 - Permitting requirements
- Delay of Closure
 - Current and future viability as closure option
 - Permit longevity
 - Informational requirements/demonstrations
- Other considerations/options?

III. Establishment of consensus on regulatory framework/requirements

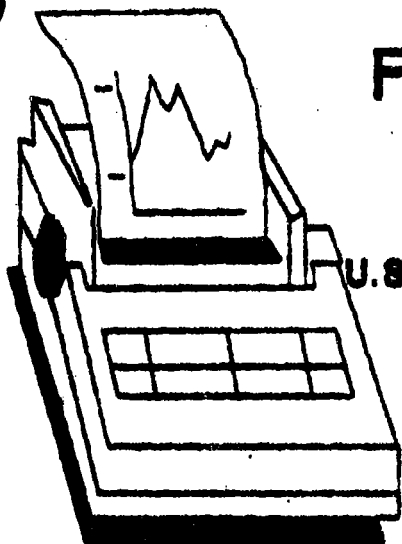
IV. Action Items

- Finalization of draft agency comments
- Future meetings/teleconferences to discuss specific issues

FACSIMILE SENT
BY Maschell DATE 5/2

430

FACSIMILE REQUEST



RCRA PERMITTING BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 6

77 WEST JACKSON (HRP-8J)
CHICAGO, ILLINOIS 60604

TO: Louis H. Meschede
OFFICE/PHONE: 708/887-1700
FACSIMILE NUMBER: 708/850-5307
VERIFICATION NUMBER: _____

Return to FROM: Todd Gmitro
OFFICE/PHONE: 312/886-5909
DATE: 5-2-94 NUMBER OF PAGES: 2

Additional comments:

Sorry for the delay.

**SENT FROM FACSIMILE NUMBER
(312) 353-4788**

Draft

**DRAFT REVIEW NOTES AND COMMENTS REGARDING MODIFIED CLOSURE PLAN,
UNO-VEN, ILD 041 550 567**

Comment: Dewatering of the sludge is acceptable, however resampling of the solids and water similar to the previous risk assessment/closure verification must occur to determine if an unacceptable level of risk still remains in the impoundment.

The level of a particular constituent in the sludge may become more concentrated during dewatering activities, or contamination may be uniformly distributed. Removal of the solids will not necessarily change the risk. The risk is based on the concentration in the solids, which will still be the same, unless there are only isolated hot spots of contamination. This is doubtful based on the management of the unit (mixing). All that may change is the mass of the remaining sludge.

Must obtain any required permits from the IEPA for any dewatering technology chosen. Be sure that this technology does not create a regulated unit.

Results of the characterization of the sludge drying bed provides evidence that a source other than the surface impoundment is causing the groundwater contamination.

Comment: Provide a summary of the groundwater management zone program. Will the impoundment be used as an active "extraction well" for the program, or does the program include monitoring only? Could another extraction point be devised?

Comment: Additional metals sampling of the groundwater is needed. Skinner List metals detected in the initial characterization of the impoundment should be included in the groundwater monitoring program for one round. Total metals (not filtered in the field) should be analyzed for in the groundwater. Any metals detected in the groundwater sampling event must be added to the quarterly groundwater monitoring list.

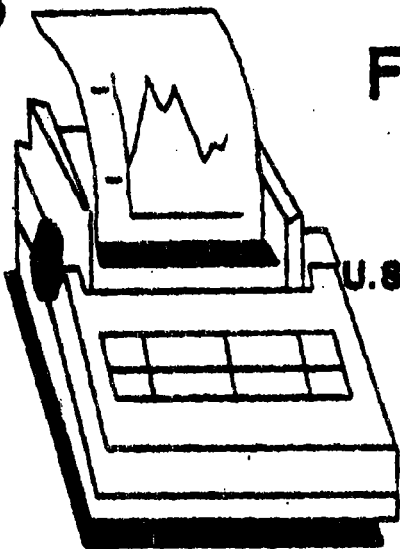
Initial characterization of the impoundment indicated that Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, Cobalt, Nickel, and Vanadium were detected as total metals.

SWB-1 through 5 were originally analyzed for only Cadmium, Chromium, Lead, and Selenium. SWB-6 through 8 have no metal data.

FACSIMILE SENT

BY MaeDee DATE 4/26
419

FACSIMILE REQUEST



RCRA PERMITTING BRANCH
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 6

77 WEST JACKSON (HRP-8J)
CHICAGO, ILLINOIS 60604

TO: Louis H. Meschede
OFFICE/PHONE: (708) 887-1700
FACSIMILE NUMBER: (708) 850-5307
VERIFICATION NUMBER: _____

FROM: Todd Gmitro

OFFICE/PHONE: (312) 886-5909

DATE: 4-26-94 NUMBER OF PAGES: 4

Additional comments: Enclosed are comments on the sludge beds report. I will fax a few more comments on the closure plan itself hopefully by 5:00. However, if it doesn't reach you the only substantial comments on the closure plan involves verification sampling and risk assessment after sludge dredging, and a round of metals analysis for monitoring wells which have never been analyzed for metals.

SENT FROM FACSIMILE NUMBER
(312) 363-4788

**NOTES and DRAFT COMMENTS/QUESTIONS REGARDING SLUDGE DRYING BED
CHARACTERIZATION REPORT, dated March 31, 1994**

Draft

(12) borings, with two samples from each core were taken, except RB-1, which only had one rock core sample due to insufficient recovery.

(14) rock samples were analyzed for BTEX, (9) for VOCs and (8) for semivolatile compounds.

Groundwater samples were collected from boreholes RB-2, 5, 8, 9, 11 and 12, based on elevated VOC readings, visual staining and fractures.

No measurable free product was discovered, however, a thin oily sheen was found on the probe and bailers at boreholes 5, 8, 11, and 12. Free product was later sampled from RB-8 and 12, and analyzed for paraffins, iso-paraffins, aromatics, naphthenes, and olefins (PIANO).

Surface water sample and sludge sample collected from NE corner of the east SWB. Water sampled for VOCs and SVOCs, and the sludge for fingerprint analysis.

RB-10 near well 2 did not have strong volatile odor or black staining present, all other borings did.

Comment/question: Why were BTEX compounds only found in (6) of the samples then, if all had strong odor?

Rock cores were fairly competent, with few voids or cavities, except for RB-1, and over 90% recovery on average.

Comment/question: Why did RB 1 have such poor recovery and the others did not?, possibly because it is in the area of the vuggy/fractured rock delineated in the 10-19-92 report. Why was the recovery of RB-4 > 90 %?, which is in this zone also.

BTEX in RB-1, 5, 7, 8, 11, and 12.

Rock core samples RB-9A, and B are in the area of other highly contaminated borings (RB-8, 11, and 12), why are they free of BTEX contamination?

Rock samples did not contain SVOC, analytical data is in the Appendix C.

Since volatiles are low in most samples and SVOC are not found it is concluded that the drying beds are not a present source for groundwater contamination and unsaturated contamination has been flushed out or degraded.

Comment/question: Explain fate and transport of the relevant compounds in the unsaturated zone and explain why SVOC have apparently been preferentially removed compared to the VOCs. Such as partitioning between the soil/rock, water, and air phases. What degradation products are expected to have occurred?

RB-8 and 12 were sampled for free product fingerprint testing.

Surface water sample in east SWB revealed benzene at 32 ppb, toluene at 75 ppb, ethylbenzene at 7 ppb, and xylene at 270 ppb; and 2,4-dimethylphenol at 76 ppb.

draft

Comment/question: Why is the benzene value so high in the ESWB?, check the risk verification sampling that was done, how do these results compare for the water and the solids. If elevated concentration, explain the source for each phase.

From the fingerprint analysis (PIANO and carbon number), it is concluded that the sludge sample in the east SWB and the RB-8 free product sample have similar origins.

Groundwater sampled from Wells-2, 7, and 8; and from RB (groundwater grab samples)- 2, 5, 8, 9, 11, and 12. All samples contain BTEX compounds. Samples 12, 9, and 11 contained the highest benzene (4200 ppb, 2600 ppb, and 2600 ppb). BTEX concentrations are highest in the northeast section of the sludge drying beds and decrease toward the SWB, which is downgradient, therefore the SWB is not a likely source of the contamination. This seems to be a reasonable interpretation.

Comment/question: Why does groundwater sample RB-9 contain 6,380 total BTEX, yet the two cores samples were below detection for all BTEX compounds?, Has it all transferred from the vadose zone to the water table? Is this an artifact of the sampling or analytical program?

1,1-dichloroethane was detected in borehole groundwater sample 12A at 9000 ppb, and is attributed to other sources to the north such as a tank farm area.

Comment/question: Present information on the waste management or product storage history of this tank farm. Check original characterization of the SWB, was 1,1 -dichloroethane present in the SWB? 1,1-DCA also detected in SWB-8 at 160 ppb in September 1993. What are the fate and transport mechanisms for 1,1-DCA, is it a DNAPL? Is it a break down product of another organic?

Several SVOC found in all groundwater samples, with highest concentrations at SWB-7, and boring 12, which also reinforces the upgradient hypothesis for contamination.

According to all potentiometric maps to date, the primary groundwater flow on the north side of the east SWB is from the north. Why then do the contour intervals for the BTEX contamination indicate a gradient from NE to SW, towards the SWB and GCSA. The general issue is to what extent should the contaminant contours "match" the potentiometric map? The facility should comment on this. By looking at solubilities and diffusion could the alternate

be better defined?

It is concluded that organics in the SWB likely result from the discharge of groundwater and sewer water from drainage pipes.

draft

-3-

Comment/question: What are these drainage pipes and why are organics still entering the SWB? Have tests of the water entering the SWB been done? Are there other pipes entering the impoundment?

If contamination is still entering the impoundment from process pipes or sewers this invalidates attempts at clean closure.

Conclusion states that the SWB is not the source of the contamination in the groundwater, and that the rock in the area of the former sludge drying beds "is not the source of the present organic contamination in the groundwater." However, previously it is stated that organics have been flushed or degraded through the rock to the groundwater, this implies that the rock and thus the drying beds was the source, at least at one time.

Comment/question: If the rock and the SWB are not the source, it should be determined what the present source of contamination is.

Why is there no SVOC contamination in RB-8 and 11 groundwater samples and then it reappears in SWB-8?

Why is there about 18-19% PIANO contamination in the SWB sludge? Was it remediated properly? How could groundwater entering the SWB have recontaminated the sludge?



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

February 4, 1994

Mr. L.D. Erchull
Senior Environmental Specialist
UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, IL. 60439-7761

Re: 1978030004 -- Will County
UNO-VEN Refinery
ILD041550567
RCRA Closure File

Dear Mr. Erchull:

35 Ill. Adm. Code 703.121(b) states that owners and operators of hazardous waste surface impoundments, landfills, land treatment units and waste piles that certified closure after January 26, 1983 must obtain a post-closure permit unless they can demonstrate closure by removal as provided under 35 IAC 703.159 and 703.160. Such post-closure permits must address applicable 35 IAC 724 groundwater monitoring, unsaturated zone monitoring, corrective action and post-closure care requirements. According to a review of Agency files, UNO-VEN is currently carrying out closure of the four land treatment areas at its facility in Lemont, Illinois. Since the closure certification for these units has not been approved by the Agency as of the date of this letter, it would appear that the requirements of 35 IAC 703.121(b) apply to the UNO-VEN facility in Lemont, Illinois. This letter constitutes a formal request for submittal of the RCRA Part B post-closure permit application for the UNO-VEN facility in Lemont, Illinois.

A RCRA Part B post-closure permit application for the four land treatment areas at the UNO-VEN facility in Lemont, Illinois must be submitted in quadruplicate and postmarked no later than August 3, 1994. The original and two copies of the application must be sent to the Illinois Environmental Protection Agency and the other copy to USEPA. Each page of the application, including all attachments (maps, plan sheets, specifications, etc.) must be uniquely numbered. One copy each of the December, 1990 version of the RCRA Part B Permit Application Decision Guide and the RCRA Part B Application Completeness/Technical Evaluation Checklist is enclosed. The subject post-closure permit application must follow the format set forth in the decision guide and should address each applicable item of the guide in Sections A, B, E, F, G, H, I (excluding I-1, I-4 and I-5), J, K and L. In addition, information must be provided, as it is available, addressing the

UNO-VEN

post-closure call in letter

Page 2

items in Sections C and D of the guide. A brief statement indicating why a given item or section is not applicable should be provided for each item or section of the guide that is not addressed in the application. A certification statement meeting the requirements of 35 IAC 702.126 must accompany the application and all additional submittals. The post-closure permit application for the subject facility must be submitted to the following addresses:

Douglas W. Clay, P.E.
Hazardous Waste Branch Manager
Permit Section, Bureau of Land
Illinois EPA
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois
62794-9276

George Hamper, Chief
Illinois Section, RCRA Permitting
USEPA, Region V
HRE-8S
77 West Jackson
Chicago, Illinois 60604

Although the specific information requirements for Part B post-closure permit applications are within the discretion of the Agency, 35 IAC 703.182 imposes various minimum requirements which are, for the most part, identified in Sections A, B, E, F, G, H, I, J, K and L of the decision guide. In addition, pursuant to 35 IAC 703.188, the subject application must contain a detailed description (including any groundwater monitoring, groundwater corrective action and public/private water supply related information) of on-site and off-site activities related to groundwater contamination at and/or around the facility. Information provided in response to this requirement which does not fall into any of the items of the decision guide and checklist must be provided as an addendum to the application.

Additional informational requirements have been imposed by the Hazardous and Solid Waste Amendments of 1984. These requirements include, but are not limited to, the following:

1. Information on the location of, and releases from, solid waste management units at the facility, regardless of the time at which waste was placed in such units (35 IAC 724.190).
2. A demonstration of financial responsibility for any on-site or off-site corrective action needed for releases of hazardous waste or constituents from any solid waste management unit at the facility (35 IAC 724.201)

Should you wish to declare some items in the application to be business confidential, this request will be processed by the Agency in accordance with 35 IAC 702.103.

UNO-VEN
post-closure call in letter
Page 3

We will coordinate review of the application with USEPA and will strive for the simultaneous issuance of Federal and State permits.

Failure to submit a complete application and to provide in full all required information are grounds for denial of this permit and referral for enforcement under the provisions of 35 IAC 705.123.

If you have any questions regarding this letter, please contact Rob Watson at 217-524-3300.

Sincerely,



Douglas W. Clay, P.E.
Hazardous Waste Branch Manager
Permit Section, Bureau of Land

DWC:wrw:pccallin
JK

Enclosures: IEPA RCRA Part B Decision Guide
IEPA RCRA Part B Checklist
Prior Conduct Certification

cc: USEPA, George Hamper (w/o enclosures) ✓
USEPA, Joe Boyle (w/o enclosures)
Will County Board



State of Illinois

ENVIRONMENTAL PROTECTION AGENCY

US EPA

Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

January 11, 1994

Mr. L.D. Erchull
Senior Environmental Specialist
UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, IL. 60439-7761

Re: 1978030004 -- Will County
UNO-VEN Refinery
ILD041550567
Log No. C-417-M-2
RCRA-Closure File

Dear Mr. Erchull:

Your letter regarding the closure plan for the land treatment area dated December 30, 1993 and received January 3, 1994 has been reviewed. Your request to extend the time required for submittal of a revised closure plan until February 14, 1994 is hereby approved.

Should you have any questions concerning this matter, please contact Rob Watson at 217-524-3265.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

LWE
LWE:WRW

cc: George Hamper, USEPA Region V ✓

C-417-M-2

cc: Maywood
USEPA

JK
WR

SEH 1214-93

UNO-VEN
Products

The UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761

John K. Bassett
General Manager

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
392 854 418

December 30, 1993

Mr. Lawrence W. Eastep
Illinois Environmental Protection Agency
Manager, Permit Section
Bureau of Land
2200 Churchill Road, P.O. Box 19276
Springfield, IL 62794-9276

Dear Mr. Eastep:

1978030004 Will County UNO-VEN
Refinery, ILD041550567
Log No. C-417-M-2
RCRA Closure File

Unocal Corporation and The UNO-VEN Company are in receipt of your December 14, 1993 letter regarding the Closure Plan for the above-referenced facility. Unocal and UNO-VEN intend to respond to the request, however, for the following reasons we are requesting a 30-day extension.

The holiday season of December has prevented the timely forwarding of your letter to the parties who are able to properly respond. Several key individuals are on vacation and are unavailable until the 3rd of January.

In addition, Unocal and UNO-VEN are jointly responsible for preparing and submitting a revised closure plan. This working arrangement does take substantially more time to prepare and review documents.

Unocal has contracted Geraghty and Miller, Inc. to prepare a revised closure plan for the Landfarm, however, in consideration of the holiday season and review procedures, we respectfully request an extension of the deadline to February 14, 1994.

If an extension is not possible, please contact me at (708) 257-4324 or Unocal's Kent J. Penningroth at (708) 330-5319.

RECEIVED

JAN - 3 1994

IEPA - BOL
PERMIT SECTION

Very truly yours,



L.D. Erchull
Senior Environmental Specialist

LDE/jr

cc: K.J. Penningroth of Unocal



Mary A. Gade, Director

2200 Churchill Road, Springfield, IL 62794-9276

217/524-3300

December 14, 1993

Mr. L.D. Erchull
Senior Environmental Specialist
UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, IL. 60439-7761

Re: 1978030004 -- Will County
UNO-VEN Refinery
ILD041550567
Date Received: September 15, 1993
Log No. C-417-M-2
RCRA-Closure File

Dear Mr. Erchull:

The CLOSURE PLAN dated September 13, 1993 for the Land Treatment Unit submitted by UNO-VEN and prepared by Geraghty & Miller, INC. has been reviewed by the Agency.

The closure plan has not demonstrated that the proposed closure activities will meet the closure performance standards of 35 IAC 725.211. Therefore, the plan cannot be approved at this time for the following reasons:

1. The wastes, soils, soil-pore water, and groundwater have not been analyzed for all parameters on the Revised Skinner List for Petroleum Refining Wastes¹. Therefore the plan cannot demonstrate that all of the hazardous constituents in these media have been identified.

- a. Tables 3-3, 3-4, and 3-5 in the closure plan do not adequately identify all hazardous wastes and hazardous constituents in the wastes or the LTA.

The closure plan does not indicate if any of the constituents on the Revised Skinner List are present in the wastes or the soils and sludges in the LTA. This information was requested in both the approved closure plan in 1988 and the rejection of the first closure plan modification.

¹"Petition to delist Hazardous Wastes, A Guidance Manual", USEPA, OSW, EPA/530-SW-85-003, April 1985, page 19.

In addition, prior to implementation of the TCLP test, sludge from the basin was placed on the LTA. Then, in an October 1, 1990 letter, UNO-VEN acknowledged that the sludge in the stormwater basin was hazardous for benzene (D018) per the TCLP test. However, the closure plan (C-417-M-2) does not discuss this hazardous waste classification for this sludge or address the concern that the soils and sludges in the LTA may be characteristically hazardous due to benzene.

Finally, the proposal for additional shallow soil sampling in Section 5.1.1 of the closure plan does not address analysis of the soil for organic TCLP parameters or any of the organics on the Revised Skinner List.

2. Because all of the hazardous constituents have not been identified, the closure plan cannot demonstrate that it addresses all of the constituents or how it is protective of human health and the environment.
 - a. The closure plan needs to include all of the information for the Phase I Report proposed in Section 4.1.9 of the approved closure plan C-417:
 - i. The potential migration pathways and migration pathway sampling results.
 - ii. The existing maximum slope of each area.
 - iii. A contour drawing of the existing surface elevations of each treatment plot.
 - iv. An estimate of the current depth of sludge on each treatment plot. This will define the "Treatment Zone."
 - v. A contour drawing of the existing surface of the undisturbed soils.
 - vi. The locations of backhoe pits and the sample locations on a drawing of the land treatment area.
 - vii. The results of the visual observations and laboratory results should be summarized and evaluated as to the existing concentrations of oil and grease, and metals in both the treatment zone and the undisturbed soils.

- b. The closure plan also needs to include the information for the Phase I Report required in the Agency's approval letter of C-417:
 - i. A scale drawing of the facility which shows the location of the entire drainage ditch and the point at which the run-off from the land treatment areas is sampled.
 - ii. A scale drawing of the facility which shows the sampling grid, sample nodes and the distance between nodes.
 - iii. The depth of the treatment zone,
 - iv. Recent analyses of wastes which UNOCAL intends to apply to the land treatment areas.
- c. The plan does not describe how the area was managed after the wastes were placed on it. Questions about the operation of the LTA include the following: what times of the year were wastes applied, were wastes applied to the surface or injected, was the area tilled after each application, how deep was the sludge tilled, how often was it tilled, and how has the LTA been managed since the last application of waste?
- d. The plan does not consistently describe when wastes were applied to the LTA. Section 1.2.3 states that wastes were most recently applied to the LTA in December of 1989. However, Tables 3-1 and 3-2 only provide information about the loadings to the LTA for 1981 to 1987. Furthermore, during a RCRA inspection on December 2, 1993, L.D. Erchull of UNO-VEN informed Mike Cimaglio (IEPA/FOS) that waste was last placed on the LTA in 1991 when the new TCLP test identified the waste to be characteristically hazardous waste for benzene. The amount and type of wastes placed on the LTA since 1987 must be provided in the closure plan. Also, the plan needs to describe why wastes were applied during the winter when the ground is frozen and microbial activity is relatively low.

- e. The closure plan does not adequately describe specifically how the objectives 35 IAC 725.380(a) are addressed for the closure period, including the time that UNO-VEN proposes to till the LTA.

- i. Section 6, page 6-1, notes that an objective of the closure plan is to reduce the potential for the release of hazardous wastes, etc to the ground. However, the plan does not specifically address groundwater.

In addition, the potential effects of the constituents in the LTA on the groundwater cannot be fully evaluated until the following information is provided:

- A. identification and concentration of all hazardous constituents (eg. organic and inorganic) in the sludge and soils in and around the LTA,
 - B. depth of the treatment zone,
 - C. depth of the perched water table in the till,
 - D. hydrogeologic conditions in the upper till.
- ii. The proposal for control of run-off is not adequate for the following reasons:
 - A. the slope(s) of the LTA during the two seasons that UNO- VEN proposes to till the areas are not discussed. The slopes of the LTA must conform with the criteria discussed in the guidance on Hazardous Waste Land Treatment (SW-874, Section 8.5).
 - B. The drawings of the LTA do not include the entire length of the drainage ditch.
 - iii. The proposal for controlling the release of airborne particulate contaminants is not adequate. Page 6-11 states that airborne particles will be controlled during closure activities, but the plan does not specify how this will be accomplished.

iv. Compliance with food chain crop requirements is not adequately addressed because the plan does not state whether or not food chain crops will be grown on the LTA.

f. The closure plan does not discuss and/or adequately describe specifically how the criteria at 35 IAC 725.380(b) are addressed for the closure period, including the time that UNO-VEN proposes to till the LTA.

i. As discussed in item nos. 1 and 2.d above, the closure plan does not adequately describe the type and amounts of the hazardous wastes and hazardous constituents which were applied to the LTA. This information is necessary in order to develop soil, soil-pore water, and groundwater monitoring systems.

ii. The plan does not discuss the mobility and expected rate of migration of the hazardous waste and hazardous waste constituents.

iii. The site location, topography and surrounding land use(s) are not adequately discussed in the plan. The drawings and topographic maps (eg. blueprints) provided with the plan need to:

A. be final documents,

B. show the surrounding land uses and owners names,

C. be signed, dated and certified by a P.E. registered in Illinois,

D. include all sample locations and/or sampling grid points,

E. include the entire length of the drainage ditch,

F. include all wells and drinking water supplies within 1000 feet of the LTA,

iv. The plan does not discuss the climate or the amount, frequency and pH of the precipitation.

- v. The soil profile and soil properties are not adequately described in the plan. The following information needs to be provided:
 - A. Cross sectional views and a post diagram of each area in the LTA that include: the soil profiles, the locations of wells and soil borings, depth of the treatment zone(s), and the groundwater elevations in the till and bedrock,
 - B. New data regarding the soil properties in the LTA including cation exchange capacity, total organic carbon, and pH. This information is necessary because the data in Table 3-8 is over 4 years old and wastes have been applied to the LTA since the data was obtained.
- vi. The closure plan needs to describe the subsurface hydrology of the perched water table in the till in much greater detail. Simply referencing sections in the Part B permit application (which was never approved) is not acceptable.
- vii. The unsaturated zone sampling data provided with the closure plan is not adequate. The closure plan needs to include data from an unsaturated zone monitoring plan which meets the requirements of 35 IAC 725.378. [See comments on the monitoring plans in item no. 3 below.]
- viii. The closure plan does not compare the type, concentration and depth of migration of hazardous waste constituents to their background concentrations. The LTA needs to be resampled for all of the parameters on the Revised Skinner List for Petroleum Refining Wastes to provide this information.
- g. The engineering characteristics of the final cover are incomplete. For example, no design limits for permeability, moisture content or density are provided, and the type of vegetation is not specified. [It is not clear why test plots to determine the best type of vegetation are required if there will be clean fill on top of the LTA.] Also, the plan needs to justify using the default data to run the HELP Model (the precipitation data is over 15 years old).

Section 4.0 of the closure plan states that clean closure will not be pursued at the LTA. Therefore, because hazardous wastes and hazardous constituents will be left in place in the LTA it appears that the closure requirements for landfills at 35 IAC 725.410 apply to the LTA. The closure plan does not address these requirements.

- h. The closure plan must include a groundwater monitoring plan. It is not acceptable to reference the groundwater monitoring portions of other documents such as Section E of the Part B permit application (which was never approved). The closure plan must be a stand alone document.
 - i. Section 5.1 is titled "Treatment Demonstration". The contents of this section do not address the requirements for a "Treatment Demonstration" as defined in the regulations. Therefore it should be retitled.
- 3. Because the extent of contamination in the soil, soil-pore water, and groundwater in the till has not been determined, the closure plan cannot demonstrate that the plan controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off or hazardous waste decomposition products to the ground, groundwater, surface waters or to the atmosphere. To address this requirement, the plan needs to include the following, at a minimum:
 - a. Until such time as a Post-Closure Care Permit is required for the LTA, the closure plan needs to include a groundwater monitoring plan which meets the requirements of 35 IAC 725 Subpart F. The groundwater monitoring plan needs to address the monitoring of the perched water table and the sand seams present in the till in order to comply with 35 IAC 725.380(c). Also, Section 6, closure activities does not discuss groundwater monitoring activities during the closure period.
 - b. The closure plan needs to include a detailed unsaturated zone monitoring plan and describe how the plan meets all of the requirements of 35 IAC 725.378.

The unsaturated zone sampling data provided with the closure plan is not acceptable for the following reasons:

- i. The samples were not analyzed for all of the potential hazardous constituents. The last analyses of the soil/sludge layer from the LTA were from 1989. The analyses did not include all of the parameters on the Skinner List or the TCLP test.
- ii. The plan did not identify the timing of the soil and soil-pore samples relative to the timing of waste application, precipitation events, and the soil permeability.
- iii. Observations of the LTA indicated that the application of wastes occurred around the lysimeters rather than directly over them.

Any soil sampling plan must be able to demonstrate clean closure or determine the nature and extent of soil contamination. If possible, your sampling program should be extensive enough to determine the lateral and vertical extent of contamination to the level of the Practical Quantitation Limit (PQL) identified in SW-846 (Third Edition) for the constituents of the waste(s) managed. All samples which are to be taken must be handled in accordance with 40 CFR, Part 261, Appendix III and the soil volatile sampling procedures which are included in the Agency's closure plan instructions as Attachment 7. The analytical methods which will be used must be specified in the closure plan and must be EPA-approved.

An adequate soil sampling and analysis plan should include the following:

- a. parameters to be analyzed (consider waste(s) managed, degradation products, etc.)
- b. locations of samples (horizontal location and depth)
- c. background samples (when applicable)
- d. sampling methods and equipment

- e. analytical methods. Include a description of any statistical methods which may be used to interpret the analytical data.
 - f. evidence of a quality assurance/quality control plan for laboratory analyses.
 - c. The closure plan needs to include a run-on control system. Section 6.1.4.2 states that run-on will occur and will be collected in the drainage ditch. However, 35 IAC 725.372(b) prohibits flow onto the active portion of the LTA during peak discharge of a 25-year storm. The plan needs to include calculations that show how this requirement is met during the entire closure period (ie. when UNO-VEN proposes to till the LTA as well as after it is covered).
 - d. The plan needs to include a run-off control system. Section 6.1.4.3 simply states that run-off will be controlled and directed to the drainage ditch, it does not indicate how the requirements of 35 IAC 725.372(c) will be met. Again, as in 3.c above, calculations need to be provided to show how this requirement will be met for the entire closure period.

Section 6.1.4, Stormwater Management, refers to the SEDCAD+ version 3.0 model and states that the design storm for all grass lined diversion channels and benches will be a 100-year, 24-hour recurrence interval rainfall event. It goes on to state that design calculations are provided in Appendices E and F. Appendix E in this closure plan is the closure cost estimate, and the plan does not include an Appendix F.
 - e. The plan needs to include a system for the control of wind dispersal of particulates. Section 6.2.4 states that particulate will be controlled, but it does not describe specifically how this will be accomplished.
4. DESCRIPTION OF THE FACILITY - The plan should describe the type of industry, Standard Industrial Code (SIC Code), products, location, size and other general, summarized information. The plan must address and identify each hazardous waste management unit at the facility. Closure plan C-417-M-2 does not identify or describe all of the hazardous waste units at the facility. For example the storm water basin (D018) is not mentioned.

Also, the closure plan does not discuss the use of groundwater and surface water in the area.

5. DESCRIPTION OF THE WASTE MANAGEMENT UNITS - Describe each unit at the facility and provide the process code and unit of measure code from the Part A (e.g., S01-1000 gal.). Include waste types for each unit (by standard chemical name and EPA Hazardous Waste No.), time period of use, dimensions, topography, soil types (as appropriate), and any other relevant information. Identify these units by reference to line numbers on the Part A application. Plans for closure must address all units on the Part A application. If some of the unit(s) will not be closed until some date in the future, identify those units and their expected date of closure. A copy of the following documents should be included in the closure plan:

- . the original Part A application (EPA Forms 3510-1 and 3510-3);
- . any revised Part A with proof of approval by USEPA or IEPA.

Closure plan C-417-M-2 does not identify or describe all of the hazardous waste units at the facility. For example the storm water basin (D018) is not mentioned. Also, Table 3-1 indicates that 18 dry tons of API Separator Sludge was applied in 1981. The Part A, in Appendix A, indicates the amount of API Separator Sludge is 13 dry tons.

6. DETAILED DRAWING OF THE UNIT(S) - Submit a plan view of the unit(s), showing dimensions, appurtenant structures and relationship to other points or structures on the facility property, at a minimum. The scale of the drawing must be specified. The map should indicate where wastes would flow if spilled, including the location of any drains, sumps or sewers that could potentially receive such spilled waste or contaminated runoff. The entire length of the drainage ditch must be shown on the topographic maps and the drawings.

7. STORAGE AREA PAVEMENT/SURFACE DESCRIPTION -Because containment structures are not present, describe the drainage features of the unit and its surroundings, and identify where spilled waste would flow. Additional sampling and analysis must be proposed to determine if releases have occurred to soil, groundwater or surface water. The locations of all sampling points must be included on the drawing of the LTA.

8. SCHEDULE FOR CLOSURE - 35 IAC 725.213 requires the owner/operator to treat, remove or dispose of all hazardous waste in accordance with the approved closure plan within 90 days after receiving the final volume of hazardous wastes or 90 days after approval of the closure plan by the IEPA. The owner/operator must complete all closure activities in accordance with the approved closure plan and within 180 days after receiving the final volume of wastes or 180 days after approval of the closure plan, if that is later.

Closures requiring time periods longer than the above, including extensions after the closure plan approval, must be reviewed and approved by the IEPA (refer to 725.213).

The proposed extended period of closure for the LTA is not acceptable at this time. In short, the hazardous constituents, and their concentrations, in the LTA have not been identified, and the expected results of two years of tilling of the LTA are not discussed or justified in the closure plan.

9. DISPOSAL UNIT CLOSURES - Any unit where waste is to be left in place, including landfills, waste piles and surface impoundments to be closed as landfills, obviously has several additional important considerations beyond that required for a "clean" closure. These include liners, caps, final cover, vegetation, groundwater monitoring and post-closure care and permit requirements.

Full descriptions and detailed engineering drawings will be required for each unit undergoing closure. Details of liners, cover, wells, final contours or any other relevant structure must be provided.

Note that there are several additional regulatory requirements for closed disposal units in 35 IAC 724 and 725.410. These requirements concern groundwater monitoring, post-closure plans, post-closure care, notice to local land authority, and notice in deed to property. Refer to 35 IAC 725.217 for groundwater monitoring requirements.

10. DESCRIPTION OF EQUIPMENT CLEANING - Any equipment, including heavy earth-movers or smaller tools, should be scraped and washed to remove waste residues. The residues should be managed as hazardous waste, and this cleaning and management should be described in the closure plan. Page 6-11 only states that equipment will be properly decontaminated. It does not describe how or where the equipment will be decontaminated. Furthermore, the plan proposes to have an extended closure schedule (eg. ~ 3 years). Will the equipment used for closure activities during closure remain in the LTA at all times? If not, it must be decontaminated each time it is moved from the LTA.
11. STATEMENT OF FACILITY STATUS AFTER CLOSURE - The closure plan should clearly state the status of the hazardous waste facility after closure is completed. For example, it should state if a storage facility is to be operated as a generator (less-than-90- day storage), and it should describe whether closure is partial or complete. If partial, it should name both the units covered by the closure plan as well as those remaining in operation. It should indicate whether the facility will continue to be a generator and transporter (if applicable).
11. POST-CLOSURE CARE PLAN - The closure plan for any disposal unit (hazardous waste left in the unit) must include an interim status post-closure plan in accordance with the requirements of Part 725 Subpart G. Owners and operators of waste management units which received wastes after July 26, 1982 or that certified closure according to 35 IAC 725.215 after January 26, 1983 are required to submit an application for a Post-Closure Permit meeting the requirements of 35 IAC, Part 724 upon request from the IEPA (35 IAC 703.121(b), 40 CFR 270.1(b) and (c)). The Post-Closure Care Plan in Section 9.0 of the closure plan is not approved at this time.

12. LOCATION DOCUMENTATION FOR LAND DISPOSAL UNITS - 35 IAC
Sections 725.216, 725.219 and 725.220 as amended March 24, 1987, describe the survey plat and notice in deed requirements for owner and operator which are closing disposal units. Note that a copy of the survey plat and a copy of the document with the notification required by 725.219(b), showing the location and dimensions of disposal areas, must be provided to the Agency with the closure certification. The closure plan does not indicate that a notification in the deed will be made, or that the notification in deed will be submitted to the Agency.
13. Identification of the deficiencies listed above in no way constitutes Agency approval or disapproval of the closure plan as it pertains to the unit(s) not closing at this time. Prior to initiating closure activities for any other unit, a closure plan must be submitted to and approved by this Agency.

Pursuant to 35 IAC 725.212(d)(4), you must submit a complete, revised closure plan (i.e., not just revised or additional pages) (one original and 3 copies) within thirty (30) days which adequately responds to the above noted comments. Failure to submit a revised plan within thirty (30) days of the date of your receipt of this letter will be considered non-compliance with the interim standards of 35 IAC, Part 725, Subpart G --Closure and Post-closure and Subpart H -- Financial Requirements.

Should you have any questions concerning this matter, please contact Rob Watson at 217-524-3300.

Very truly yours,

Lawrence W. Eastep LWE

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control
Bureau of Land

LWE:WRW

cc: George Hamper, USEPA Region V

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

DATE: 12-14-93

SUBJECT: UNO-VEN Refinery Site Visit, ILD 041 550 567

FROM: T. Gmitro
IL Section, RPB

TO: RCRA Files

On Friday, December 3, 1993, Todd Gmitro and Thad Slaughter of the U.S. EPA conducted a site visit at the UNO-VEN Refinery in Lemont, Illinois. The purpose of the site visit was to observe the drilling and sampling of additional rock cores to the north of the stormwater basin.

We arrived just as the rock coring was beginning. The drilling method being employed was air rotary, with a hollow-stem drill. The recovery on the rock core was very poor, perhaps ten percent. The reason for this is unknown, and should be explained by the facility or their consultant. The rock core that was recovered was dense, crystalline dolomite. The rock core recovered from the first five feet was clean (no oil sheen) and had low to background Organic Vapor Analyzer (OVA) readings. The rock core recovered within the next five feet of drilling was also grey-colored, fine, dense, crystalline dolomite. However, this sample was stained with visible oil, and had OVA readings two to three times higher than the previous rock core. This rock core did not provide any evidence of verticle conduits, which would indicate that the oil contamination could have originated from the ground surface. Results of the other borings should be similarly evaluated. We cut the site visit short at this time.

C-417

cc: Maywood / USEPA

JKM

The UNO-VEN Company

76 Products

Nicholas J. Nedeau
Counsel

3850 North Wilke Road
Arlington Heights, IL 60004-1269

Tel: (708) 818-7419
Fax: (708) 818-7155

October 14, 1993

Mr. James Moore, P.E.
Manager, Corrective Action Unit
Permit Section
Division of Land Pollution Control
Bureau of Land
Illinois Environmental Protection Agency
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794


Re: IEPA No: 1978030004 - Will County
Facility Name: UNO-VEN Refinery
U.S.EPA No: ILD041550567
RCRA Closure File

Dear Mr. Moore:

Please accept this letter as a confirmation of our telephone call this morning regarding the extension of time for UNO-VEN's response to Illinois EPA's questionnaire dated September 16, 1993. Pursuant to our discussion, UNO-VEN's response will be due on December 16, 1993.

I very much appreciate the extension of time and look forward to working with you.

Very truly yours,


Nicholas J. Nedeau
Environmental Counsel

NJN/msf

cc: Andy Pollak
Darrell Jacob
Bill Busse
Lee Erchull
Cathy Barnard

nedeau\moore.ltr

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OFFICE OF RCRA
WASTE MANAGEMENT DIV.
EPA, REGION V

ENSR Consulting
and Engineering
740 Pasquinelli Drive
Westmont, Illinois 60559
(708) 887-1700
(708) 850-5307 FAX

September 30, 1993

ENSR Project No: 6941-022-500

Mr. Todd Gmitro
U.S. EPA-Region V
Mail Code HRP-8J
77 W. Jackson Blvd.
Chicago, IL 60604-3590

SUBJECT: Deliverable Schedule For Modified Closure Plan - Stormwater Basin, UNO-VEN
Refinery, Lemont, Illinois

Dear Todd:

The purpose of this letter is to document the revised deliverable schedule for the subject project as a result of our meeting on September 21, 1993, at your office. The existing schedule was outlined in a letter dated July 15, 1993, from George Hamper of U.S. EPA.

A modified closure plan will be submitted to the U.S. EPA within 90 days of our meeting date or Monday, December 20, 1993. The closure plan will be modified to address closure by removal, and to provide for additional characterization of the source of oily residue previously observed in rock adjacent to the north side of the east stormwater basin. Lastly, a post-closure plan will not be required.

If you have any questions please do not hesitate to contact me.

Sincerely,

Louis H. Meschede

Louis H. Meschede
Manager, Regulatory Compliance

LHM/tlo

Reference No. 93-09-T579

cc: L. Erchull - UNO-VEN

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

DATE: 9-27-93

SUBJECT: MEETING WITH THE UNO-VEN COMPANY

FROM: Todd Gmitro, Geologist
RPB, Illinois Section

TO: RCRA Files

On September 21, 1993, the U.S. EPA held a followup meeting with representatives of the UNO-VEN Company and their consultant to discuss future closure activities for their Stormwater Basin. It was decided that the facility would amend their existing closure plan to attempt clean closure through the combination of sludge removal and continued bioremediation. An alternate source demonstration will also be prepared by the facility to address high levels of volatile organic contamination on the north side of the surface impoundment. Representing the U.S. EPA were George Hamper, Thad Slaughter, and Thomas Nash.

ENSR

September 17, 1993

ENSR Project No: 6941-022-500

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SEP 21 1993

OFFICE OF RCRA
WASTE MANAGEMENT DIVISION
EPA, REGION V

and
740 Pasquini
Westmont, Illinois
(708) 887-1700
(708) 850-5307 FAX

Mr. Todd Gmitro
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Mail Code HRP-8J
Chicago, IL 60604-3590

SUBJECT: Options For Continued Operation of the Stormwater Basin - UNO-VEN
Refinery, Lemont, Illinois

Dear Mr. Gmitro:

As discussed in our meeting at EPA's Region V office on July 5, 1993, and in subsequent telephone conversations, UNO-VEN has considered the various tactical options that may be available to further address the stormwater basin (SWB) sludges while allowing continued operation of the SWB. These options were evaluated in the context of the basin's current status as a hazardous waste management unit undergoing closure. We expect to discuss these options with you during our upcoming meeting, set for 10:00 a.m. on September 21, 1993.

Amendment of Closure Plan to Achieve Closure by Removal

In order to achieve clean closure UNO-VEN must meet the general closure performance standards under 265.111 and unit-specific requirements for surface impoundments under 265.228. The latter requirements specify either removal or decontamination of all waste.

UNO-VEN first attempted clean closure of the SWB by decontamination through bioremediation. As we know now, decontamination to meet U.S. EPA risk assessment criteria was not achieved; however, a significant amount of hazardous waste sludge has been converted to nonhazardous waste. Because U.S. EPA has determined that decontamination efforts were not completely successful, UNO-VEN would like to evaluate the possibility of achieving clean closure by supplementing decontamination with removal.

Delay of Closure

Existing regulations [265.113 (d)] allow facilities to discharge nonhazardous waste to surface impoundment after the final receipt of hazardous waste at the unit.

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We look forward
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the vicinity of the S

Sincerely,

Louis H. Meschede

Louis H. Meschede
Manager, Regulatory Compliance

LHM/tlo

Reference No. 93-09-T555

cc: L. Erchull
T. Nash/USEPA

cc: Mr. [unclear] USEPA
UNO-VEN
76 Products

A.4.2 JKL
The UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761

SEH 918-93

John K. Bassett
General Manager

September 14, 1993

Mr. Lawrence W. Eastep
Illinois Environmental Protection
Agency
Division of Land Pollution Control
2200 Churchill Road
Springfield, Illinois 62794-9276

Dear Sir:

UNO-VEN Refinery Land Treatment
Facility Closure Plan

Attached are three (3) copies of a closure plan for the UNO-VEN Refinery Land Treatment Facility.

If you have any questions, please contact L. D. Erchull at (708) 257-4324.

Very truly yours,

L. D. Erchull
L. D. Erchull
Senior Environmental Specialist

LDE/jr

Attachments

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SEP 15 1993

PERMIT SECTION

PERMIT SECTION

SEP 15 1993

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ENSR

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JUL 23 1993

OFFICE OF RCRA
WASTE MANAGEMENT DIV
EPA, REGION V

ENSR Consulting
and Engineering
740 Pasquinelli Drive
Westmont, Illinois 60559
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(708) 850 -5307 FAX

July 22, 1993

ENSR Project No: 6941-022-810

Mr. Todd Gmitro
U.S. Environmental Protection Agency
RCRA Permitting Branch
77 West Jackson Blvd. - HRP-8J
Chicago, IL 60604-3590

SUBJECT: Stormwater Basin Closure - UNO-VEN Refinery, Lemont, Illinois

Dear Gmitro:

The purpose of this letter is to document our telephone conversation today regarding the July 15, 1993, letter from Mr. George Hamper of U.S. EPA approving ENSR's July 12, 1993, request to shut down and remove the stormwater basin (SWB) bioremediation system at the UNO-VEN Refinery. The letter also discussed decontamination requirements and the schedule for submittal of modified closure and post-closure plans.

During our conversation, we agreed that UNO-VEN will decontaminate system equipment over a self-contained cleaning pad using a high-pressure water wash or steam cleaning. Liquids will be captured and routed directly by the process sewer system to the facility's waste water treatment plant for treatment. Solids will be recovered, tested, and disposed of appropriately based on analytical results. In addition, UNO-VEN proposes that the initial decontamination event be witnessed by an ENSR professional engineer to ensure conformance with these requirements. Subsequent decontamination events will be performed by UNO-VEN personnel using the procedures established during the initial event.

The July 15 letter from Mr. Hamper states that the closure plans must be submitted within 60 days and that U.S. EPA is open to another meeting in August to discuss closure options. Based on our meeting on July 8, 1993, it was UNO-VEN's understanding that U.S. EPA would consider possible closure options, based in part on inquiry and discussion with headquarters personnel, during the 3- to 4-week period following that meeting, and that another meeting would be held to present the selected closure options to UNO-VEN. Without an understanding of these options, it is not possible to begin modifying the closure plan or prepare the post-closure plan. UNO-VEN is prepared to meet with U.S. EPA at your earliest convenience. Assuming U.S. EPA will be available for a meeting to discuss closure options by mid-August, you agreed that the 60-day time-frame for plan submittal will be from the date of the meeting.



July 22, 1993
Mr. Todd Gmitro
Page 2

I trust that this letter accurately represents our telephone conversation and look forward to hearing from you regarding the proposed meeting date. If you have any questions, please do not hesitate to call.

Sincerely,

A handwritten signature in cursive script that reads 'Lou Meschede'.

Louis H. Meschede
Manager, Regulatory Compliance

LHM/tlo

Reference No. 93-07-T475

cc: L. Erchull, UNO-VEN

APR 01 1993

HRP-8J

Thomas W. Barrs, P.E.
Manager, Environmental Engineering
ENSR Consulting and Engineering
740 Pasquinelli Drive
Westmont, Illinois 60559

Re: UNO-VEN Lemont Refinery,
ILD 041 550 567

Mr. Barrs:

This letter is in response to your request, dated February 26, 1993, to revise the Stormwater Basin Closure Plan for the above referenced facility, dated June 1991, and approved on October 22, 1991. The United States Environmental Protection Agency (U.S. EPA) has reviewed this request and hereby approves the use of high performance liquid gas chromatography (HPLC) (SW-846, Third Edition Method 8310) for analyzing polynuclear aromatic hydrocarbon (PAH) constituents in the stormwater basin solids.

This approval is subject to the following conditions: (1) actual achieved method detection limits (MDLs) must be reported and used in the verification sampling and risk assessment report for all constituents regardless of the test method; (2) for purposes of clarification, in Table 4-1 of Appendix D the holding time for volatile organic analysis (VOA) is 7 days unpreserved, and 14 days with acid preservation from the time of sample collection to the time of sample analysis; (3) this modification does not change the method of analysis for volatile and semi-volatile organic constituents in the solids or for any water constituents; and (4) this modification does not affect any of the original closure plan approval conditions, dated October 22, 1991.

Please contact Todd Gmitro, of my staff, at (312) 886-5909, if you have any questions regarding this letter.

Sincerely,

ORIGINAL SIGNED BY
GEORGE J. HAMPER

George J. Hamper, Chief
Illinois Section
RCRA Permitting Branch

cc: L. Erchull, UNO-VEN
L. Eastep, IEPA

TG
4-1-93

4/1/93

88



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Westmont, Illinois 60559
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(708) 850-5307 FAX

February 26, 1993

ENSR Project No: 6941-022-101

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MAR 2 1993

Mr. Todd Gmitro
United States Environmental Protection Agency
Office of RCRA, Region 5
HRP-8J
77 West Jackson Boulevard
Chicago, Illinois 60604-4788

OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

SUBJECT: UNO-VEN Lemont Refinery - Request for Revision to The Stormwater Basin
RCRA Closure Plan

Dear Mr. Gmitro:

By copy this letter, UNO-VEN is requesting review and approval of the following change to the stormwater basin RCRA closure plan, dated June 1991, and approved by U.S. EPA on October 22, 1991.

As discussed with U.S. EPA in February 1993, UNO-VEN is requesting that high performance liquid gas chromatography (HPLC)(SW-846 Method 8310) for analyzing for polynuclear aromatic hydrocarbon (PAH) constituents in the stormwater basin (SWB) solids be added to the closure plan. Analyses for volatile and semi-volatile organic constituents in the solids and all water analyses (including PAHs) will continue as described in the original closure plan.

The reason for requesting this change to the closure plan is that HPLC analyses, especially for carcinogenic PAHs provide lower detection limits in this type of solid matrix than can be achieved using GC/MS analyses. We believe these lower detection limits provide a closer assessment of the actual concentrations of carcinogenic PAH materials in the SWB solids.

For purposes of the SWB risk assessment calculations, determining the upper 95th confidence limit (UCL) for any constituent values that are shown to be non-detect (less than the detection limit) requires using 50% of the detection limit. The carcinogenic PAH compounds exhibit the greatest impact on the cumulative cancer risk imposed by the SWB solids. Therefore, it is proper to use the analytical method with the lowest detection limit to best reflect the actual concentration of carcinogenic PAH. Since concentrations for some carcinogenic PAH constituents are nondetect using the HPLC methods, 50% of a lower detection limit has a major impact on the overall risk calculations, and subsequently the status of the closure.

March 1, 1993
Mr. Todd Gmitro
Page 2

It is important to stress in this request for modifying the closure plan, that no changes are proposed for the sampling program or methods or for any of the agreed upon risk calculation methods and evaluation criteria. This is only a requested change to add Method 8310 for analyzing the SWB solids for PAH compounds.

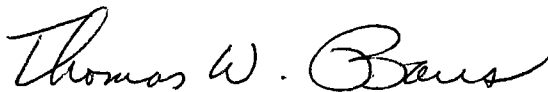
By revising the analytical method for the PAH compounds, UNO-VEN believes that the constituent concentrations of the SWB solids will be more accurately defined and that the time to complete the remediation of the SWB solids will be substantially reduced. Therefore, it is requested that the closure plan be revised to add method 8310 for PAH analyses of the SWB solids.

The attached pages and Appendix D of the closure plan have been revised to reflect the method change. These should be inserted into your copy of the closure plan. Specifically, the changes are:

- Add method 8310 to Section 4.5, Solids Verification Analyses
- Add Section 5.1.3.1 to Appendix D, Quality Assurance Project Plan, Polynuclear Aromatic Hydrocarbon (PAH) Analyses.
- Add Table 5-3 to Appendix D, Quality Assurance Project Plan, Polynuclear Aromatic Hydrocarbon (method 8310 list).
- Other pages, such as tables of contents, were altered due to the above changes.

Please provide your approval of closure plan modifications request as soon as possible.

Sincerely,



Thomas W. Barrs, P.E.
Manager, Environmental Engineering

TWB/rj

ENSR Reference No. 93-02-A026

*Revisions in
original copy of
June 1991
closure plan
TB 4-1-93*

FEB 18 1993

HRP-8J

Thomas W. Barrs, P.E.
Manager, Environmental Engineering
ENSR Consulting and Engineering
740 Pasquinelli Drive
Westmont, Illinois 60559

Re: UNO-VEN Lemont Refinery,
ILD 041 550 567

Mr. Barrs:

This letter is in response to your request, dated February 16, 1993, to extend the time of closure for the Stormwater Basin at the above referenced facility. The United States Environmental Protection Agency has reviewed this request and hereby approves an extension of the date to complete closure of the Stormwater Basin to December 31, 1993.

This letter is also in response to your letter, dated February 5, 1993, regarding a change of analytical method(s). Please note that this proposed Class 1 modification of the closure plan must be submitted for approval before any confirmation sampling data can be reviewed. Please contact Todd Gmitro, of my staff, at (312) 886-5909, if you have any questions regarding this letter.

Sincerely,


George J. Hamper, Chief
Illinois Section
RCRA Permitting Branch

cc: L. Erchull, UNO-VEN
L. Eastep, IEPA

Typ	Author	FL
JG	TG	Chief
2-18-93	2-18-93	2/18/93



ENSR Consulting
and Engineering
740 Pasquinelli Drive
Westmont, Illinois 60559
(708) 887-1700
(708) 850 -5307 FAX

February 16, 1993

Mr. Todd Gmitro, Geologist
U.S. Environmental Protection Agency
Office of RCRA, Region 5
HRP-8J
77 West Jackson Boulevard
Chicago, Illinois 60604-4788

RECEIVED

FEB 17 1993

OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

SUBJECT: UNO-VEN Lemont Refinery - Request for Extension of Date to Complete Closure of the Stormwater Basin (SWB).

Dear Mr. Gmitro:

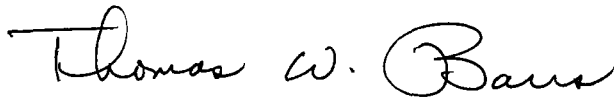
Pursuant to our discussions of January and February 1993, we are requesting an extension to December 31, 1993, of the period to complete the closure of the stormwater basin (the original date of closure is April 10, 1993). The reasons for the requested extension are as follows.

1. Based on the results of the November and December 1992 monthly SWB sampling, and a subsequent preliminary risk assessment analysis, it appeared that the remediation of the stormwater basin (SWB) solids had progressed sufficiently to conduct confirmation sampling. This sampling was conducted during the first week of February 1993. Due to the number of samples being collected and the required analyses, the results are not expected from the laboratory before the beginning of March. To complete the SWB closure, a final risk assessment and final closure report must be prepared and submitted for EPA approval. It is unlikely that this will be accomplished by April 10.
2. In the event that the results of the verification sample analyses show that remediation has not progressed to where the cleanup objectives have been met, the extension as requested allows for another full season of aeration and remediation of the SWB through approximately October 1993. The additional two months after October 1993 will allow enough time for the risk assessment and closure documentation to be completed.

February 16, 1993
Mr. Todd Gmitro, Geologist
Page 2

We trust these reasons adequately explain our request for an extension to the closure timeframe and the revised closure date. Please advise us of your concurrence and approval as soon as seen possible, or call with any questions.

Very truly yours,

A handwritten signature in cursive script that reads "Thomas W. Barrs". The signature is written in dark ink and is positioned above the printed name and title.

Thomas W. Barrs, P.E.
Manager, Environmental Engineering

TWB/rj

Reference No: 93-02-Y016

cc: L. Erchull, UNO-VEN



ENSR Consulting
and Engineering
740 Pasquinelli Drive
Westmont, Illinois 60559
(708) 887-1700
(708) 850 -5307 FAX

February 5, 1993

ENSR Project No: 6941-022-810

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FEB 08 1993

OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

Mr. Todd Gmitro, Geologist
US Environmental Protection Agency
Office of RCRA, Region 5
HRP-8J
77 West Jackson Boulevard
Chicago, Illinois 60604-4788

SUBJECT: UNO-VEN Stormwater Basin Closure - Change of Analytical Method

Dear Todd:

This will confirm our conversation of February 2, 1993 where we discussed our request to change the analytical method used to analyze the storm water basin solids using high pressure liquid chromatography (HPLC), method 8310 in lieu of GC/MS, method 8270. During our discussions, EPA verbally agreed that this change would be acceptable. UNO-VEN will be required to submit the following:


1. A letter requesting the change to the closure plan and a summary of why the requested change is being made.
2. Revised appropriate pages of the closure plan to show this change for EPA approval. The current assumption is that this constitutes a Class 1 modification and will not require additional public notices before the change will be approved.

In addition, we also discussed requesting an extension to the closure completion date. This will be in the form of a letter listing the desired period of extension and justification for the extension request.

Mr. Todd Gmitro
Page 2
February 5, 1993

We are currently working on both of these submittals and expect to have them completed within the next two weeks. Thank you for your assistance on this matter and please call with any questions, comments, or corrections.

Very truly yours,

A handwritten signature in cursive script that reads "Thomas W. Barrs." The signature is written in dark ink and is positioned above the printed name and title.

Thomas W. Barrs, P.E.
Manager, Environmental Engineering

TWB/rj

cc: L. Erchull - UNO-VEN
G. Ferguson - ENSR

ENSR Reference No. 9302Y008

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: January 22, 1993

SUBJECT: UNO-VEN SITE VISIT

FROM: ¹⁶²Todd Gmitro, Geologist
RCRA Permitting Branch

TO: RCRA Files

On January 20, 1993, Todd Gmitro and Gale Hruska conducted an oversight visit to the UNO-VEN Company's oil refinery in Lemont, Illinois. A ground-penetrating radar (GPR) survey was observed during the inspection. A surface impoundment at the site is undergoing RCRA closure activities which include bioremediation of sludges and water, and groundwater monitoring. North of the impoundment is a shallow area of oily residue in highly fractured dolomite, which was recently encountered during coring investigations. The purpose of the GPR survey is to help delineate the vertical and horizontal extent of the fractured/void zone within the dolomite; and to help determine the location for two additional groundwater monitoring wells in this area.

The crew from ENSR spent much of the morning preparing the machinery, and calibrating the radar to determine the degree of resolution they were obtaining through the dolomite. Several initial lines were surveyed before we broke off the site visit due to the unexpected cold and wind. The effectiveness of the survey will have to be interpreted conservatively, with great attention to actual existing core data.

DEC 18 1992

L.D. Erchull
Senior Environmental Specialist
UNO-VEN Company
135th and New Avenue
Lemont, Illinois 60439-3659

HRP-8J


Re: Stormwater Basin Closure,
Supplementary Investigation

Mr. Erchull:

This letter is in response to the Supplemental Groundwater Investigation Work Plan, dated December 4, 1992. The United States Environmental Protection Agency (U.S. EPA), has reviewed this document and found it to be acceptable. It is the U.S. EPA's interpretation that proposed well SWB-8 will be installed, unless void spaces, or fracturing of the dolomite makes this impossible. Should this occur, a grab groundwater sample would then be collected through temporary casing in the area north of the east basin, where the oily residue was found. The geophysical survey will be used to determine the location of the last, additional well to the north of the east basin; and to better delineate the fractured zone of dolomite.

The U.S. EPA requests that UNO-VEN provide notice of the date(s) when the supplemental investigation will occur. You may contact Todd Gmitro, at (312) 886-5909 if you have any questions regarding this letter.

Sincerely,


George J. Hamper, Chief
Illinois Section
RCRA Permitting Branch

cc: Larry Eastep, IEPA

TG
12-18-92

UNO-VEN
76 ProductsCERTIFIED MAIL
RETURN RECEIPT REQUESTED
P 993 516 269The UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761John K. Bassett
General Manager

December 4, 1992

RECEIVED

DEC 8 1992

OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION VMr. Todd Gmitro
U.S. Environmental Protection Agency
Waste Management Division, HRP-8J
77 West Jackson Blvd.
Chicago, IL 60604-3590UNO-VEN Bioremediation

Dear Mr. Gmitro:

The purpose of this correspondence is to update you on the ongoing bioremediation of the stormwater basin at the UNO-VEN Refinery in Lemont, Illinois. The bioremediation has been proceeding in accordance with the approved Closure Plan. With the onset of winter, the temperature of the contents of the basin has dropped to a point where biological activity has ceased. Accordingly, on November 25, 1992, we shut off the aerators until temperatures rise again in the spring. We have reviewed the approved Closure Plan and do not believe a modification is required for this activity.

During this winter shutdown period, sampling required by the Closure Plan will continue, although it is expected to be at a minimum frequency consistent with the Plan.

Please do not hesitate to contact me at (708) 257-4324 if you have any questions or need to discuss this further.

Very truly yours,


L. D. Erchull
Senior Environmental Specialist

LDE/ss

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: November 6, 1992
SUBJECT: UNO-VEN Meeting
FROM: Todd Gmitro ⁴⁶
TO: RCRA Files

THE UNO-VEN COMPANY

On Thursday, November 6, 1992, Todd Gmitro and George Hamper met with representatives of the UNO-VEN Company and their consultant, ENSR to discuss the progress of closure activities at their Lemont Refinery. Bioremediation of volatile\semivolatile contaminated water and sludge in a surface impoundment apparently progressed well this summer, however recent rock coring and monitoring well construction required by the U.S. EPA has identified a new area of contaminated groundwater directly adjacent to the impoundment. This contamination was encountered in a highly fractured, void zone within the Dolomite. Investigative and remediation requirements for this area were addressed at the meeting.

It was agreed that UNO-VEN would proceed with the investigative techniques outlined in their letter to the U.S. EPA, dated October 19, 1992. This includes additional rock coring and historical identification of solid waste management units that might be contributing to the contamination. It was also agreed that UNO-VEN would install an additional well at the NE corner of the East Stormwater Basin approximately 150-200 feet west of well SWB-2. This is necessary since wells SWB-6 and 7 will not provide useful clean closure data for the impoundment, but can still be used to determine "background" groundwater quality at the site. UNO-VEN will also determine the suitability of using geophysical methods to determine the extent of the fractured, void zone.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

SEP 04 1992

L.D. Erchull
Senior Environmental Specialist
UNO-VEN Company
135th and New Avenue
Lemont, Illinois 60439-3659

REPLY TO THE ATTENTION OF:
HRP-8J

Re: Stormwater Basin Closure,
Response to Comments,
Preliminary Risk Assessment.

Dear Mr. Erchull:

This letter is in response to the meeting on August 5, 1992, between the United States Environmental Protection Agency (U.S. EPA), and representatives of The UNO-VEN Company and ENSR Consulting and Engineering. The subject of this meeting was the document entitled "Response to Comments Preliminary Risk Assessment", dated July 9, 1992. The attached memorandum includes the U.S. EPA's response to each of the notice of deficiency comments discussed at this meeting.

The U.S. EPA requests that the well logs for the two additional wells be submitted within 45 days of the date of this letter. When UNO-VEN believes that the upper end of the cleanup target is reached (industrial assumption), UNO-VEN should submit the information required by Condition 9 of the closure plan approval letter (dated October 22, 1991), along with the information mentioned under Comment 1 of the enclosed memorandum. If closure is not expected to be attainable by April 10, 1993, UNO-VEN should submit a closure plan modification request to have the time of closure extended. This request should include a projected time of closure and supporting information for the extension.

You may contact Todd Gmitro, at (312) 886-5909 or Carole Braverman, at (312) 886-2589 if you have any questions regarding this letter.

Sincerely,

ORIGINAL SIGNED BY
GEORGE J. HAMPER

George J. Hamper, Chief
Illinois Section
RCRA Permitting Branch

Enclosure

cc: Larry Eastep, IEPA

RCRA PERMITS	REG.	ADVIS.	FILE	CH. ADVIS.	RCRA CHIEF	U.S. EPA	WMD DIR
INCL DATE	TG 9/4/92	TG 9/4/92	JMA 9/4/92				

72

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

MEMORANDUM

DATE: September 2, 1992

SUBJECT: Preliminary Remediation Goals for Clean Closure of the UNO-VEN
Stormwater Basin, Lemont Illinois

FROM: Carole T. Braverman, Ph.D. ^{CTB}
Toxicologist

TO: George Hamper, Chief
Illinois Permitting Section, RCRA Permitting Branch

On August 5th, Todd Gmitro, Thad Slaughter and I attended a meeting with representatives from UNO-VEN, ENSR, and an attorney representing the company, to discuss UNO-VEN's responses to EPA's comments on cleanup goals for a surface impoundment. These responses were submitted to Region 5 in a document entitled "Response to Comments, Preliminary Risk Assessment", prepared by ENSR and dated July 9, 1992. UNO-VEN is performing bioremediation of the surface impoundment and intends to continue to use the unit as a non-regulated stormwater basin following closure. Six NOD comments (dated May 22, 1992) and one additional issue were discussed.

Comment 1. UNO-VEN proposed to include only a future industrial scenario to set cleanup goals. Since clean closure allows any future land use, Region 5 has always required a goal of residential soil values. A cleanup target range for this impoundment that spans industrial and residential cleanup goals would insure the final levels are as close to the residential goal as can be attained within a reasonable period of time. When the upper end of the range (industrial target) is reached, UNO-VEN should submit bioremediation data discussing the feasibility of attaining residential cleanup levels, including a projected time frame. The final cleanup level should be decided at that point. A discussion of background levels of polycyclic aromatic hydrocarbons may be helpful in setting a final bioremediation goal.

Comment 2. For the purposes of determining preliminary clean-up standards at this site, Region 5 will accept the ENSR proposal for a clean-up of 10⁻⁶ risk per carcinogen as long as cumulative risk is below 10⁻⁵.

Comment 3. The original submittal provided no groundwater sampling information. U.S. EPA disagrees with the assertion by UNO-VEN that there is adequate evidence to demonstrate that the contamination in well SWB-1 and SWB-2 cannot be from the stormwater basin. UNO-VEN has agreed to install two additional wells in the form of a well cluster, one shallow and one deep, between SWB-2 and SWB-3. Monitoring data from these new wells should provide for a more definitive answer as to the source of the groundwater

contamination. The maximum detected concentration of benzene was roughly ten times higher than the MCL.

Comment 4. UNO-VEN proposes to assess potential for soil contaminants to leach to groundwater using the toxicity characteristic leaching procedure (TCLP) test. The TCLP is not the model of choice for site-specific applications. The VIP screening model, which can be obtained from the U.S. EPA's Kerr Lab in Ada, Oklahoma, should be used instead. This analysis is in addition to the discussion of current groundwater status as specified above.

Comment 5. This issue was satisfactorily resolved by UNO-VEN's response to comments. For the purposes of this risk assessment, Region 5 will accept the use of Toxic Equivalency Factors for PAHs proposed as Region 4 Interim Guidance, February 1992.

Comment 6. This issue was satisfactorily resolved in UNO-VEN's response to comments. The original submittal was based on average concentrations. UNO-VEN agreed to use the 95% upper confidence limit on the arithmetic mean per U.S. EPA guidance.

The use of Monte Carlo analysis was also discussed. Region 5 will not accept Monte Carlo or similar statistical methods until Headquarters provides guidance on the subject. See attached memorandum from Dr. J. Milton Clark of Region 5 to Betsy Anker-Johnson of General Motors.

ATTACHMENT

cc: Karl Bremer
Todd Gmitro
Thad Slaughter

UNO-VEN**Products**

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
P 690 510 941

The UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761

John K. Bassett
General Manager
December 27, 1991

RECEIVED
DEC 30 1991

OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

Mr. Todd Gmitro
U.S. Environmental Protection Agency
Waste Management Division
230 S. Dearborn
Chicago, IL 60604

UNO-VEN Bioremediation

Dear Mr. Gmitro:

The purpose of this correspondence is to update you on the ongoing bioremediation of the stormwater basin at the UNO-VEN Refinery in Lemont, Illinois. The bioremediation has been proceeding in accordance with the approved Closure Plan. With the onset of winter, the temperature of the contents of the basin has dropped to a point where biological activity has ceased. Accordingly, on December 9, 1991, we shut off the aerators until temperatures rise again in the spring. We have reviewed the approved Closure Plan and do not believe a modification is required for this activity.

During this winter shutdown period, sampling required by the Closure Plan will continue, although it is expected to be at a minimum frequency consistent with the Plan.

Please do not hesitate to contact me at (708) 257-4324 if you have any questions or need to discuss this further.

Very truly yours,

L. D. Erchull
L. D. Erchull
Senior Environmental Specialist

LDE/cl



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAY 22 1992

REPLY TO THE ATTENTION OF:

HRP-8J

L.D. Erchull
Senior Environmental Specialist
UNO-VEN Company
135th and New Avenue
Lemont, Illinois 60439-3659

Re: Stormwater Basin Closure,
Groundwater Monitoring Plan
and Risk Assessment.

Dear Mr. Erchull:

This letter is in response to your workplan for an Alternate Groundwater Monitoring Program, dated September 23, 1991, and to your document entitled, "Development of UNO-VEN Preliminary Cleanup Objectives for Clean Closure Using Risk Assessment", dated February 6, 1992.

The United States Environmental Protection Agency (U.S. EPA) has reviewed these documents. The workplan for an Alternate Groundwater Monitoring is approved subject to the conditions contained in Attachment I. The cleanup targets in the above mentioned February 6, 1992 document, however, are not acceptable. Risk Assessment deficiencies which need to be addressed are contained in Attachment II. Please submit the additional information or deficiencies specified in Attachments I. and II. within 45 days of receipt of this letter. A separate report or letter addressing each attachment should be submitted.

You may contact Todd Gmitro, at (312) 886-5909 for questions regarding groundwater monitoring, and Carole Braverman, at (312) 886-2509 for questions regarding risk assessment.

Sincerely,

George J. Hamper

for George J. Hamper, Chief
Illinois Section
RCRA Permitting Branch

Attachments

cc: Larry Eastep, IEPA

Attachment I. Alternate Groundwater Monitoring Plan Conditions.

1. Under 40 Code of Federal Regulations (40 CFR) 265.92(d) parameters indicating groundwater contamination must be sampled for semi-annually, and groundwater quality parameters must be sampled for annually, until closure activities are complete.
2. Two additional wells shall be installed to the north of the East Stormwater Basin and shall be clustered to determine the shallow and deep groundwater quality on this side of the basin; and to assess the vertical flow gradient. These wells should be placed as close to the point of compliance (edge of the East Stormwater Basin) as possible. One of the wells shall be screened at a deeper interval (similar to SWB-4) and the other shall be screened in the upper aquifer (similar to SWB-5). These wells shall be constructed according to the details provided in Appendix F of the Approved Closure Plan, dated June 27, 1991.
3. Groundwater sampling and analysis of wells SWB 1 through SWB 5, including the two wells required by Condition 2. above, shall continue on a quarterly basis until final closure of the Stormwater Basin. This quarterly sampling should, if possible, be done during a high-water stage. If the Stormwater Basin does not reach a high-water stage during a quarter, samples must still be taken. This sampling and analysis is required by 40 CFR 265.93(d)(7) and 265.90(d), since groundwater contamination has been detected in three previous sampling events, including a high-water stage.
4. As suggested in the RCRA Alternate Groundwater Monitoring Program Report, dated January 24, 1992, a surveyed staff gage shall be installed in the Green Coke Storage Area (GCSA) sump pump to monitor water levels during all water level monitoring events.
5. The facility equipment inspection schedule required by 40 CFR 265.15(b)(1) must be updated to account for Stormwater Basin monitoring well and associated equipment inspection. This should include maintenance and decision criteria for replacement of wells or associated equipment.
6. The Alternate Groundwater Monitoring Plan must be certified by a qualified geologist or geotechnical engineer (40 CFR 265.90(d)).
7. UNO-VEN shall continue to comply with the Recordkeeping and Reporting requirements of 40 CFR 265.94(b).
8. An explanation is needed as to how the presence or absence of immiscible layers (floaters or sinkers) will be determined.

Attachment II.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: May 19, 1992

SUBJECT: Development of Preliminary Clean-up Objectives for Clean Closure
Uno-Ven Company, Lemont, Illinois.

FROM: Carole T. Braverman, Toxicologist

TO: Todd Gmitro, Geologist

Per your request, I have reviewed the document entitled "Development of UNO-
VEN Preliminary Cleanup Objectives for Clean Closure Using Risk Assessment"
prepared by ENSR and dated February 1992. It is the intention of the facility
to use risk assessment to demonstrate clean closure of these areas following
bioremediation. The cleanup targets as proposed by ENSR are not acceptable
since they were not derived in accordance with current agency guidance on
clean closure.

Specifically my comments are as follows:

1. The risk assessment assumes that future land use will be industrial, citing the July 27, 1990 Federal Register (55FR30798) and the RCRA Facility Investigation (RFI) Guidance to support this assumption. This is inappropriate for a risk assessment to support clean closure. The rule cited in the risk assessment is the proposed Subpart S rule which deals with corrective action. Under clean closure no land use restrictions can be considered, therefore the possibility of future residential use of the land must be considered.
2. The preliminary clean-up objectives proposed by ENSR are based on a $1e-5$ risk. OSWER Directive 9476.00-9, Part 265 Land Treatment Closure/ Post Closure Guidance states that for both soil pathways and for groundwater pathways closure target levels should be based on a $1e-6$ risk for class "A" and "B" carcinogens and a $1e-5$ risk only for class "C" carcinogens in the absence of MCLs .
3. There is no information on the condition of the groundwater. The next draft of this document should include groundwater monitoring data. The current document does not include information on metals in the sediment or the leachate. Metals which are to be analyzed for to determine clean closure are identified in Condition 5. of the October 22, 1991 Closure approval letter. This information should be included as well.

4. Fate and transport models cannot be used to derive exposure point concentrations in the risk assessment to support closure. See Federal Register Vol 52:8704, March 19, 1987 "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage and Disposal Facilities; Final Rule.
5. It is my understanding that EPA formally has not adopted a Toxic Equivalents approach for PAHs. Please include the source of the TEF approach used in this document in the references. EPA's Environmental Assessment and Criteria Office is currently recommending a slope factor for benzo(a)pyrene of 5.8 (mg/kg-day)⁻¹.
6. Average concentrations are of limited value in a risk assessment since EPA's Risk Assessment Guidance for Superfund calls for the use of the 95% upper confidence limit on the arithmetic mean. Please include the 95% UCL value as well as the range of detected concentrations in Table 2-1.

UNO-VEN

76 Products

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
P 690 510 940

The UNO-VEN Company
UNO-VEN Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761

John K. Bassett
General Manager
December 18, 1991

RECEIVED

DEC 23 1991

OFFICE OF RCRA
Waste Management Division
U.S. EPA, REGION V

Mr. Todd Gmitro
Waste Management Division
United States Environmental
Protection Agency
Region 5
230 South Dearborn Street
Chicago, IL 60604

Dear Sir:

Stormwater Basin (SWB) Closure
Status Report

In response to comments 7a and 7b of the United States Environmental Protection Agency's (U.S. EPA) closure plan approval letter dated October 22, 1991, enclosed is the Stormwater Basin (SWB) Closure Status Report. Comment 7c, regarding target cleanup objectives, will be addressed as soon as a risk assessment has been completed by our consultant.

Please do not hesitate to contact me if you should have any question regarding the contents of this report.

Very truly yours,



L. D. Erchull
Senior Environmental Specialist

LDE/cl

Attachments

OCT 22 1991

Mr. L.D. Erchull
The UNO-VEN Company
Chicago Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659

5HR-13

Re: Stormwater Retention Basin Closure
ILD 041 552 567

Dear Mr. Erchull:

The closure plan submitted by UNO-VEN for the Stormwater Retention Basin, dated June 27, 1991, has been reviewed by the United States Environmental Protection Agency (U.S. EPA). Your closure plan to close the surface impoundment (T02) is hereby approved subject to the following conditions.

1. Closure activities must be completed by April 10, 1993. When closure is complete the owner or operator must submit to the U.S. EPA certification, by both the owner or operator, and an independent registered professional engineer (P.E.) in Illinois, that the facility has been closed in accordance with the specifications in the approved closure plan. This certification must be received within 60 days after completion of closure activities, or no later than June 9, 1993.

The closure certification form included in the closure plan must be submitted with original signatures, along with two additional copies. Signatures must meet the requirements of 40 CFR 265.115. The independent engineer should be present at all critical, major points during closure. The frequency of the inspections by the independent engineer must be sufficient to determine the adequacy of each major closure activity. Financial assurance must be maintained for the unit approved for closure herein, until the U.S. EPA approves the facility's closure certification. The Illinois Professional Engineering Act requires that any certification or engineering service which is performed for a closure plan in the State of Illinois must be done by a registered Illinois P.E. (Ill. Rev. Stat., Ch. 111, par. 5101 et. seq.).

As part of the closure certification, to document closure activities, please submit a Closure Documentation Report, which in addition to all information specified on page 12-1 of the approved closure plan includes:

- a. A summary of all closure costs involved;
- b. A description of sample and analytical methods, sample preservation methods, and chain-of-custody. The information

regarding tests performed, methods and results should include, but is not limited to; background and confirmation sampling, Quality Assurance/Quality Control (QA/QC) Data, and the bioremediation process monitoring program, and contour maps;

- c. If any hazardous waste or residues (including waste from decontamination activities) are removed provide; the volume, method of waste handling and transport, waste manifest numbers, and copies of waste manifests;
- d. A request for release of financial assurance documents should be included with the closure certification documents; and
- e. A clear statement of the status of the facility after closure, included a revised Part A Application (as specified on p. 10-1 of the approved closure plan).

The original and two copies of all certifications, logs, or reports which are required to be submitted to the U.S. EPA by the facility should be mailed to the following address:

Todd Gmitro
RCRA Permitting Branch, 5HR-13
United States Environmental Protection Agency
230 South Dearborn
Chicago, Illinois 60604

- 2. If the U.S. EPA determines that implementation of this closure plan fails to satisfy the requirements of 40 CFR 265.111, the U.S. EPA reserves the right to amend the closure plan.
- 3. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the requirements of the Occupational Safety and Health Administration's (OSHA) Hazardous Waste Operations and Emergency Response Standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination, and training. General site workers engaged in activities that expose, or potentially expose them to hazardous constituents, must receive at least 40 hours of safety and health training off-site, and at least three days of actual field experience under supervision of a trained, experienced supervisor. Managers and supervisors at the site must have an additional eight hours of training on managing hazardous waste operations.
- 4. To avoid creating a regulated unit during closure, obtain any necessary permits for waste disposal prior to initiating activities. Should it be necessary to store hazardous waste on site prior to off site disposal, do so only in containers or tanks for less than 90 days. Do not create regulated waste pile units. The 90 day accumulation time exemption applies only to containers and tanks.

5. Confirmation samples shall be analyzed for Volatile Organics (Method 8240); Semi-Volatile Organics (Method 8270); and for Arsenic, Barium, Chromium, Lead, Mercury, Nickel, Selenium, and Vanadium (since these metals were detected in the Skinner sample). Total metals may be run, and the TCLP shall be run, on any sample for which the total metals is above the characteristic level specified in 40 CFR 261. Confirmation sample data must be corrected or "normalized" for each analyte of concern, based on the bias correction factors calculated from target analyte matrix spike recovery data, if applicable.

All samples shall be analyzed individually (no compositing). Sampling and analytical procedures shall be conducted in accordance with the latest edition of SW-846, and Attachment 1 Soil Volatile Sampling Procedures, at the end of this letter. Field screening/testing shall not be conducted on samples to be sent to the laboratory for analysis. Sample size per interval shall be minimized to prevent dilution of any contamination. Apparent visually contaminated material within a sampling interval shall be included in the sample portion to be analyzed. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the practical quantitation limit (PQL) for that parameter in the latest edition of SW-846.

6. If clean-closure cannot be achieved, then a modified closure plan and a post-closure plan prepared pursuant to 40 CFR 265.118, must be submitted to the Agency for review and approval within 60 days of such a determination.
7. Within 45 days of the date of this letter, please provide a summary report to the Agency describing the initial progress of the bioremediation program, and any demonstrations of sludge movement in the retention basin. This is for informational purposes only, and is not for Agency approval (refer to pp. 3-5, and 4-14 of the approved closure plan).

The following information must be submitted within 45 days of the date of this letter, and must be approved by the U.S. EPA before confirmation sampling can begin:

- a. The statistical methods and rationale used to determine that a significant number of samples have been calculated (see page 4-15 of the approved closure plan);
- b. The test methods and detection limits used for confirmation sampling. These tables along with all other tables in the QA/QC plan were not included in the closure plan; and
- c. Target cleanup objectives (for soil, water, and groundwater) for each contaminant of concern based on maximum concentration levels of U.S. EPA established health-based exposure limits. Health-based limits are based on verified reference doses and carcinogenic potency factors listed in the Integrated Risk

Information System (IRIS) data base. If these standards and criteria do not exist for certain contaminants of concern, then cleanup targets may be based on U.S. EPA approved detection limits, or background concentrations.

If elevated background levels can be documented, then these levels may be acceptable for cleanup targets. However, background samples must be proven to be located in areas not affected by operations of the impoundment or any other unit, or by accidental or emergency operations.

8. All hazardous waste that results from this project is subject to annual reporting requirements (35 IAC 722.141), and shall be reported to the Illinois Environmental Protection Agency (IEPA) by March 1 of the following year, for wastes treated and left on-site or shipped off-site for storage, treatment and/or disposal during any calendar year. Additional information and appropriate forms may be obtained from the IEPA by contacting:

Administrative Compliance Unit
Division of Land Pollution Control
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, Illinois 62794-9276

9. Confirmation sample data collected to verify that "clean" closure has been achieved must be submitted for approval by the U.S. EPA. On or before the date when confirmation data is submitted, UNO-VEN must also submit the final health-based, cleanup objectives.

Confirmation reporting forms should include information indicating where quality control samples were obtained, and laboratory reporting should indicate that the lab has performed standard QA/QC procedures. Confirmation data should be presented in a clear, complete format, including narrative, data listings, and summary tables. Example summary tables include; contaminant concentrations by media (soil, water), and by well and date for groundwater. Summary tables should also include the number of less than detection values; the total number of values; and the mean, standard deviation, minimum value, and maximum value for each parameter.

The final cleanup objectives may be based on site-specific criteria such as; leachability to the groundwater, existing and future groundwater use, and future use of the impoundment. Final cleanup levels must be protective of human health and the environment, based on cumulative health risks posed by exposure to any residual contamination remaining after closure, considering additive effects and multiple routes of exposure. When final cleanup targets are below analytical limits of detection, the final target may be adjusted to equal the approved detection limit.

The point of compliance for all routes of exposure (surface water contact, groundwater ingestion, inhalation, direct contact, soil ingestion) is defined as the surface impoundment's boundary. Consideration of contaminant attenuation is not acceptable for clean-closure demonstrations. If a model will be used to justify site-specific cleanup criteria, site conditions must match the assumptions of the model. Soil cleanup levels, as well as groundwater cleanup levels, will depend to a great extent on the existing and potential use of groundwater and/or surface water in the area surrounding the facility. Information and documentation regarding existing and potential use of groundwater and/or surface water in the area surrounding the facility should be provided to justify a site-specific, health-based cleanup level. The owner/operator should contact the Illinois Department of Public Health (Springfield) at 217/782-5830, the IEPA Division of Public Water Supplies (DPWS) at 217/785-8653, the Illinois State Water Survey (Champaign) at 217/333-8497, and the Illinois State Geological Survey (Champaign) at 217/333-4747 to gather information on area surface and/or groundwater use. Local water use restrictions or zoning rules that restrict or regulate the use of surface and/or groundwater should also be identified.

10. Closure activities will not be considered complete until an approved groundwater monitoring program has been implemented. The U.S. EPA is currently reviewing the Alternate Groundwater Monitoring Workplan, dated 9/23/91.

Should you have any questions regarding this letter, please contact Todd Gmitro, at (312) 886-5909, for assistance. Specific questions regarding risk assessment should be directed to Harriet Croke, at (312) 886-0995.

Sincerely yours,

David A. Ullrich
Director
Waste Management Division

Attachment

cc: Dale Helmers, ENSR Consulting and Engineering
Larry Eastep, IEPA

TYP. TG 10-17-91	AUTH. TG 10-17-91	IL CHIEF [Signature] 10/18/91	IN. CHIEF 	MI. CHIEF 	MR/WI CHIEF 	CH. CHIEF 	RPS CHIEF [Signature] 10/18/91	O.R. A.D.D. WEM 10/18/91	WMD DIR [Signature] 10/21/91
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FD 10-52

Log This

8-26-91

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION V
230 South Dearborn Street
CHICAGO IL 60604

EPA

FACSIMILE REQUEST AND COVER SHEET

PLEASE PRINT IN BLACK INK ONLY

TO Dale A. Helmers, Senior Project Manager
ENSR Consulting and Engineering

OFFICE/PHONE 708/887-1700
708/850-5307

MACHINE NR:
VERIFICATION NR:

REGION/LAB

FROM Todd Gmitro

PHONE 312/886-5909

MAIL CODE 5HR-13

OFFICE RCRA, Permitting Branch
ILLINOIS Section

DATE August 26, 1991

NUMBER OF PAGES TO INCLUDE THIS COVER SHEET
6

Please number all pages

INFORMATION FOR SENDING FACSIMILE MESSAGES

EQUIPMENT	FACSIMILE NUMBER	VERIFICATION NUMBER
PANAFAX PX-100	FTS: 886-9096(auto) Comm: (312)886-9096	FTS: 886-3096 Comm: (312)886-3096
XEROX 400	FTS: 886-9483(manual) Comm: (312)886-3096	FTS: 886-3096 Comm: (312)886-3096

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9:00

62

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5

DATE: August 26, 1991

SUBJECT: UNO-VEN Stormwater Retention Basin Closure Plan

Todd Gmitro
FROM: Todd Gmitro, RCRA Permitting

TO: Dale A. Helmers, Senior Project Manager
ENSR Consulting and Engineering

Enclosed, for your consideration, are DRAFT review notes regarding the UNO-VEN Stormwater Retention Basin Closure Plan (June 1991). The Public Comment period for this closure plan began on August 26, 1991, and will end on September 25, 1991. Any comments from the public will be taken into consideration by the U.S. EPA in making the final closure plan decision. According to 40 Code of Federal Regulations (40 CFR) 265.112(d)(4), after the end of the comment period, the U.S. EPA will formally respond by approving, modifying, or disapproving the Closure Plan. As you have requested, the attached Draft notes will help you determine the Agency's initial concerns/thoughts regarding the plan. Please call me, at (312) 886-5909, if you have any questions.

**DRAFT REVIEW NOTES FOR
UNO-VEN STORMWATER RETENTION BASIN CLOSURE PLAN
DATED JUNE 1991**

1. Closure activities will not be considered complete until the groundwater monitoring program has been installed and a demonstration has been made that the groundwater clean closure objectives have not been exceeded. If clean closure objectives have been exceeded, then it may be necessary to demonstrate that the surface impoundment has not or could not have impacted the quality of the groundwater. Generally, clean closure is not feasible when groundwater contamination has occurred.
2. The sample closure certificate included in the closure plan is acceptable. The independent engineer should be present at all critical, major points (activities) during closure. Any certification or engineering service which is performed for a closure plan in the State of Illinois must be done by a registered Illinois P.E.

As part of the closure certification, to document closure activities, a Closure Documentation Report will be required. This report must include all information specified on page 12-1 of the closure plan. In addition, the Closure Documentation Report should include: a summary of all closure costs involved; and a description of sample and analytical methods, sample preservation methods, and chain-of-custody. Information regarding tests performed, methods and results should include, but is not limited to: background and confirmation sampling; QA/QC Data; and the bioremediation process monitoring program, and contour maps. If any waste or waste residues (including waste from decontamination activities) is removed, then provide: volume; method of waste handling and transport; waste manifest numbers; and copies of waste manifests.

3. Confirmation samples shall be analyzed for Volatile Organics (Method 8240); Semi-Volatile Organics (Method 8270); and for Arsenic, Barium, Chromium, Lead, Mercury, Nickel, Selenium, and Vanadium (since these metals were detected in the Skinner Sample). Total metals may be run, the TCLP shall be run on any sample for which the total metals is above the characteristic level specified in 40 CFR 261. Confirmation sample data must be corrected or "normalized" for each analyte of concern, based on the bias correction factors calculated from target analyte matrix spike recovery data.

All samples shall be analyzed individually (no compositing). Sampling and analytical procedures shall be conducted in accordance with the latest edition of SW-846 and Attachment 1 Soil Volatile Sampling Procedures, at the end of these notes. Field screening/testing shall not be conducted on samples to be sent to the laboratory for analysis. Sample size per interval shall be minimized to prevent dilution of any contamination. Apparent visually contaminated material within a sampling interval shall be included in the sample portion to be analyzed. To demonstrate a parameter is not present in a sample, analysis results must show a detection limit at least as low as the PQL for that parameter in the latest edition of SW-846.

DRAFT

-2-

4. The following information must be submitted for approval by the U.S. EPA before confirmation sampling begins: the statistical methods and rationale used to determine that a significant number of samples have been calculated (page 4-15 of the Closure Plan); and the test methods and detection limits used for confirmation sampling (these tables along with all other tables in the QA/QC plan were not included).
5. To avoid creating a regulated unit during closure, obtain any necessary permits for waste disposal prior to initiating activities. Should it be necessary to store hazardous waste on site prior to off-site disposal, do so only in containers or tanks for less than ninety (90) days. Do not create regulated waste pile units. The ninety (90) day accumulation time exemption applies only to containers and tanks.
6. CLEAN CLOSURE OBJECTIVES

Clean closure is possible under two options; cleanup to background, or to health based levels. The Surface Impoundment Clean Closure Manual states a target cleanup level should be set for each contaminant of concern based on maximum concentration levels of Agency established health-based exposure limits. Health-based limits are based on verified reference doses and carcinogenic potency factors listed in the Integrated Risk Information System (IRIS) data base. If these standards and criteria do not exist for certain contaminants of concern, then cleanup targets may be based on background concentration.

UNO-VEN should develop these health-based cleanup targets. If elevated background levels can be documented, then these levels may be acceptable for cleanup targets. However, background samples must be proven to be located in areas not affected by routine operations of the impoundment or other units, or by accidental or emergency operations. Final cleanup levels must be protective of human health and the environment based on cumulative health risks posed by exposure to any residual contamination, considering additive effects and multiple routes of exposure. When final cleanup targets are below analytical limits of detection, the final target may be adjusted to equal the detection limit. These detection limits (in lieu of health-based levels) must be approved by the Agency. Detection limits are not necessarily the same as the PQL.

The point of compliance for all routes of exposure (surface water contact, groundwater ingestion, inhalation, direct contact, soil ingestion) is defined as the surface impoundment's boundary. Consideration of contaminant attenuation is not acceptable for clean closure demonstrations. Confirmation sampling of the groundwater, surface water and solids must be adequate to demonstrate that any constituents, originally in the unit and that remain at closure, are below levels posing a threat to human health and the environment (considering all routes of exposure). UNO-VEN should develop preliminary cleanup targets based on direct ingestion health-based limits. This data will help determine whether clean closure is a reasonably attainable goal. Final cleanup targets should then be calculated based on site-specific criteria such as; leachability to the groundwater, existing and future groundwater use, and future intended use of the impoundment.

DRAFT

DRAFT

-3-

Questions regarding cleanup objectives and health-based exposure limits/calculations should be directed to Harriet Croke, Risk Assessment Expert, Office of RCRA, at (312) 886-0995. All cleanup targets are subject to Agency approval.

5



ATTACHMENT 1

Soil Volatile Sampling Procedures

Procedure:

A. PREPARATION AND DECONTAMINATION OF SOIL SAMPLER (i.e., STAINLESS STEEL, BRASS, BRONZE, COPPER, etc.). An example of these samplers would be a shelby tube, split-barrel sampler with metal tube inserts or California sampler. These are only examples there may be more types available. Also, the sample tube must be at least six inches long.

- *1. Wash tubing or sampler with hot water and a nonfoaming detergent.
2. Rinse with hot water.
- *3. Rinse with a solvent, such as hexane or acetone.
4. Rinse with very hot water to drive off solvent.
5. Rinse with deionized distilled water.
6. Air dry.
7. Store the sampler in aluminum foil until ready for use.

*Consult the laboratory for specific recommendations.

B. SOIL SAMPLING FOR VOLATILE ORGANICS

1. Using a properly decontaminated sampler (refer to preparation and decontamination instructions), push or drive the sampler to obtain a representative soil sample.
2. DO NOT remove sample from sample tube in the field. The laboratory should remove the sample from the sampling tube.
3. Immediately add clay or other cohesive material (i.e., wetted bentonite) to the ends of the sample to eliminate head space, if necessary.
4. Cover both ends of the sampler with aluminum foil. If possible, cover the aluminum foil with a cap.
5. Put the sample in storage at 4 degrees centigrade immediately.
6. Transport the samples to the laboratory as soon as possible. Most laboratories require delivery within 24 hours of sampling.

NOTE: Soil samples which will be tested for volatile organic constituents cannot be composited because of the volatilization which would result from any composting method.

FEDERAL EXPRESS

UNO-VEN
Products

The UNO-VEN Company
Chicago Refinery
135th Street & New Avenue
Lemont, Illinois 60439-3659
Telephone (708) 257-7761

SEH 495-91

John K. Bassett
General Manager

June 27, 1991

ILD 041 550 567

Mr. Valdas Ademkus
c/o Todd Gmitro
U.S. Environmental Protection Agency
230 S. Dearborn St.
Chicago, IL 60604

Dear Sir:

UNO-VEN Stormwater Basin
Closure Plan

Enclosed are two copies of our Stormwater Basin Closure Plan. One of these copies contains the original certification letter by our General Manager. For your information, four copies of the plan are also being submitted to the IEPA.

If you have any questions regarding our submission, please direct them to L. D. Erchull at (708) 257-4324.

Very truly yours,



William F. Busse
Supervisor, Environmental Services

LDE/dis

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CONVERSATION RECORD

TIME

4:30 PM

DATE

5/23/91

TYPE

☐ VISIT

☐ CONFERENCE

☒ TELEPHONE

☐ INCOMING

☒ OUTGOING

Location of Visit/Conference:

NAME OF PERSON(S) CONTACTED OR IN CONTACT WITH YOU

Dale Helmers

ORGANIZATION (Office, dept., bureau, etc.)

ENSR

TELEPHONE NO.

709/887-1700

SUBJECT

Closure Plan for UNO-VEN'S
Surface Impoundment

SUMMARY

I talked with UNO-VEN'S consultant regarding progress of their closure plan. The plan should be ready for my review in 2-3 weeks. After I review the plan, we will have a meeting if there are some larger issues I wish to discuss or have clarified. I told him that as closure activities progress, I want to be present when the monitors are shut down and samples are taken for TCLP testing. Piezometers have been installed for groundwater monitoring requirements. According to the TC rule the surface impoundment must have a groundwater monitoring program certified one year after the effective date of the rule. Dale informed me that Unoven will probably have to request an alternative groundwater monitoring system, since there is no up gradient.

ACTION REQUIRED

Review /NOO closure plan when it is received.

NAME OF PERSON DOCUMENTING CONVERSATION

Todd Gmitro

SIGNATURE

Todd Gmitro

DATE

5/23/91

ACTION TAKEN

SIGNATURE

TITLE

59

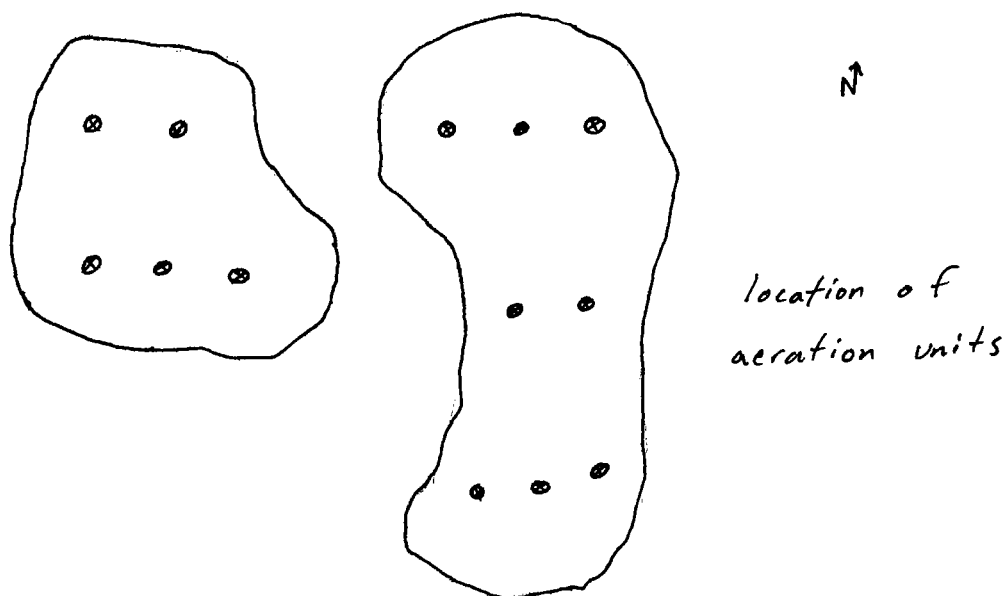
DATE

SITE VISIT: UNO-VEN COMPANY, CHICAGO REFINERY (ILD 041 55⁰ 567)
Lemont, Illinois 60439-3659

On Friday, May 3, 1991, Todd Gmitro of the U.S. EPA met with Lee Erchull and Catherine Barnard of UNO-VEN at their Chicago Refinery. The site visit lasted from 1:45p.m. to 3:00p.m. The purpose of the site visit was to verify that the facility had taken appropriate measures to turn their surface impoundment into an aggressive biological treatment unit. The facility has installed high rate aeration units in the impoundment, in order to completely mix any sludge at the bottom of the impoundment. This sludge would have become a listed waste (F037) on May 2, 1991. The impoundment is also being fed with activated sludge from the facilities wastewater treatment plant. UNO-VEN plans to demonstrate clean closure of the impoundment, and a closure plan is being prepared.

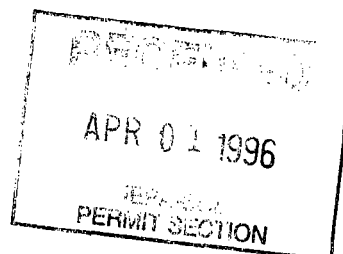
UNO-VEN installed 13 aeration units, each with 75 hp. Approximately 1.5-1.75 million gallons per day of water from the impoundment is sent to the wastewater treatment plant. The impoundment is kept at a volume of approximately 20 million gallons, and a depth of 8 feet. Influent to the impoundment is non-oily process wastewater and storm water. The hydraulic retention time of the impoundment is approximately 10 days. With each passing day the impoundment becomes more dilute, since the water containing emulsified oil/solids from the impoundment is being sent to the wastewater treatment plant, and storm water is being added to the impoundment. The aeration units were installed beginning on April 17, and were started on April 25, 1991. Before aeration, the impoundment had a suspended solids concentration of about 50 ppm, and currently the concentration is about 5000 ppm.

The aeration appears to be working well, with the impoundment being well mixed. Large logs, old mops, boots, gloves, and other debris have been brought to the surface. However, UNO-VEN still should perform some bottom sampling to verify that there is no sludge on the bottom of the impoundment which remains nonaerated.



March 29, 1996

Edwin C. Bakowski, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
Bureau of Land --- #33
Permit Section
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276



1978030004 -- Will County
The UNO-VEN Company,
Chicago Refinery
RCRA Permit Log No. 162
ILD041550567

Dear Mr. Bakowski:

Enclosed please find four copies of responses to the Notice of Deficiency (NOD) issued by the Illinois Environmental Protection Agency (IEPA) on March 19, 1996 to The UNO-VEN Company (UNO-VEN). Geraghty & Miller, Inc. (Geraghty & Miller) is submitting these responses on behalf of the Unocal Corporation (Unocal) and UNO-VEN. As requested, this letter cross-references each NOD item, indicating the location of the response to each item. We have also included a replacement table which indicates the pages which should be removed from the previously submitted permit application and replaced by the enclosed pages. Each page that has changed is marked with a revision number and date for tracking purposes.

1. *Response to Item 10 in the Agency's December 15, 1995 letter. Pursuant to a February 22, 1996 conference call with Tom Hall, this information was not provided with the February 29, 1996 submittal.*

Response

The closure plan design drawings included with this submittal address Item 10 in the Agency's December 15, 1995 letter. The closure design drawings have been modified to reflect the smaller than expected volume of nonhazardous SWB sediments placed on the Land Treatment Facility (LTF) for temporary storage during 1995.



2. *P.E. Certification: All technical information in the application must be certified by a Professional Engineer that is licensed to practice in Illinois. The statement provided in Section K only states that the final design drawings will be certified. There is much more technical information in the application that must also be certified by a P.E.*

Response

P.E. certification of the Part B permit application is being added to Section K with this submittal.

3. *Drawing #9: Several areas on the drawing need to be clarified. Elevations need to be identified on several of the contour lines, and the thick jagged line running from the northwest to southeast needs to be identified.*

Response

The areas to be clarified have been corrected on the revised drawing, now Drawing No. 10, included with this submittal.

4. *The overall drainage for the LTA is not clearly described in the application. The narrative and drawings of the storm water management practices for the LTA need to identify the following:*
 - a. *The areas surrounding the LTA need to be identified on the topographic maps,*
 - b. *The size of drainage area drained by the intermittent stream, including any area outside of the LTA,*
 - c. *The locations, amounts and flow rates of the water that runs onto the LTA during the peak rainfall event (including the variables used to calculate these numbers),*
 - d. *The locations, amounts and flow rates of the water that runs off the LTA during the peak rainfall event (including the variables used to calculate these number),*
 - e. *The direction of flow of the run-off when it leaves the diversion channels,*
 - f. *The direction of flow of the run-off when it leaves the LTA,*
 - g. *The goals and design parameters of the storm water management system need to be provided. For example, the peak flow (cfs) in the diversion*

channels, stream, and any culvert, the depth of flow, minimum free board in the channels, and maximum amount of soil erosion and sediment production, etc. should all be provided. The calculations in Appendix C (page I-392) should be used to demonstrate how the goals and parameters are met, not in place of them,

- h. The equations and values of the variables used to calculate the above information.*

Response

A facility topographic map with additional areal coverage has been added as Drawing No. 1 to the set of design drawings. The direction of surface water flow onto and off of the LTF is indicated by arrows on Drawing No.1 (Facility Map) and Drawing No.10 (Stormwater Management Plan). The Agency's comments are also being addressed in the Closure Plan text by revisions in Section 3.1.5, Stormwater Management Plan. The design calculations for the diversion channels, intermittent stream and soil erosion loss calculations are also being updated with this submittal to reflect the soil cover system design modifications (Appendix C of the Closure Plan).

- 5. Typical Details on Drawing #11: The drawing should include at least one detail for Area 1 that included the storm water basin sludge. In particular, the placement of the sludge should not extend beyond the boundary of the LTA. The details and narrative should also be revised to clarify the differences between the sludge and the subbase layer.*

Response

Section A on Drawing No. 11 notes that regraded waste materials and SWB sediments (sludge) shall not be placed outside the boundary of the given landfarm area. Revised text in Section 3.1.4, Final Grading Plan, also indicates that there shall be no placement of any regraded waste material or SWB sediments beyond the boundary of a given landfarm area.

- 6. Closure of Culverts: If culverts are abandoned (closed in place), the application needs to describe the procedures that will be followed.*

Response

Section 3.1.4, Final Grading Plan, in the closure plan has been revised to include a description of the procedure for abandoning the culverts in place.

- 7. Run-off from the LTA travels off-site: The path that the run-off takes when it leaves the LTA (e.g. off-site across Mobil's property and then back on to UNO-VEN's) needs to be clearly stated in the narrative and shown on the drawings.*

The application needs to indicate if activities off-site could negatively affect the drainage from the LTA.

Response

The path that run-off takes when it leaves the LTF, traverses the Mobil property and then re-enters the UNO-VEN refinery is shown on Drawing No. 1 included with this submittal. The text in Section 3.1.5.3 of the closure plan has also been revised to describe the path that surface run-off takes after leaving the LTF. Runoff from the Mobil property enters into the UNO-VEN stormwater management system for treatment and discharge to the Chicago Sanitary & Ship Canal pursuant to UNO-VEN's NPDES permit. Existing federal and state laws such as the Federal Water Pollution Control Act and the Illinois Environmental Protection Act are sufficient to prohibit Mobil from negatively impacting drainage from the LTF.

8. *The pipelines on Drawing B-5: Only portions of the pipelines are shown on Drawing B-5. If possible, these lines should be color coded to differentiate them from the other lines on the figure. The drawing should indicate that only the point where the pipelines enter and leave the site are shown on this figure.*

Response

The revised Figure B-5 included with this submittal identifies the referenced pipelines with a colored highlighter. Also, a note has been added to Figure B-5 indicating that the pipelines are shown only at points where they enter or exit the facility.

We trust that this information is responsive to your needs at the present time. If you have any questions about this response, please contact Claude Harmon at (708) 257-4450.

Sincerely,
GERAGHTY & MILLER, INC.



Gary Cipriano, CPG
Principal Hydrogeologist/Project Manager

cc: Claude Harmon, UNO-VEN
Tom Hall, Unocal

REPLACEMENT TABLE

Response to March 19, 1996 Completeness NOD
 RCRA Part B Post-Closure Permit Application
 UNO-VEN Refinery, Lemont, Illinois

SECTION	REMOVE	REPLACE WITH	DESCRIPTION OF CHANGES
<u>Volume I</u>			
B	Figure B-5 (pg. B-9)	Figure B-5 (pg. B-9)	Highlighted locations of pipelines where they enter or exit the refinery. Also, added note on Figure B-5 indicating that the figure only shows pipeline locations at the point where they enter or exit the refinery.
<u>Volume II</u>			
I	I-35 to I-48	I-35 to I-48e	Replace Section 3 of Closure Plan to reflect temporary storage of a smaller volume of SWB sediments and resulting cover system design modifications. The revisions also address Items 3, 4, 5, 6 and 7 of the Agency's March 19, 1996 letter.
I	I-68a to I-68j	I-68a to I-68k	Revised set of cover system design drawings to reflect temporary storage of a smaller volume of SWB sediment. The revised drawings address Item No. 10 in the Agency's December 15, 1995 letter and Items 3, 4, 5, 6 and 7 of the Agency's March 19, 1996 letter.
I	I-8 to I-11	I-8 to I-11	Revised table of contents pages for the Closure Plan
I	I-383 to I-411	I-383 to I-411i	Revised calculations for soil erosion loss, peak flow calculations for diversion ditch sizing and peak flow calculations for existing intermittent stream.



REPLACEMENT TABLE

Page 2 of 2

Response to December 15, 1995 Completeness NOD
RCRA Part B Post-Closure Permit Application
UNO-VEN Refinery, Lemont, Illinois

SECTION	REMOVE	REPLACE WITH	DESCRIPTION OF CHANGES
<u>Volume IIa</u>			
K	K-1	K-1	Revised text indicating that the signed P.E. Certification Form is included in Appendix K-1
K	K-3	K-3	Re-signed Part B Certification Form.
K		K-5	Added P.E. Certification Form

\\uno-ven\CI0487.002\data\replmnt3.xls



MAR 15 1991

Mr. Lee R. Cunningham
Gardner, Carton & Douglas
Quaker Tower
321 North Clark Street
Chicago, Illinois 60610-4795

5HR-13

Re: Uno-Ven Surface Impoundment
closure ILD 041552567

Dear Mr. Cunningham:

This is in response to your March 1, 1991, letter in which you raised several questions about a surface impoundment at the referenced facility.

Your first question concerned the listing of F037 (certain petroleum refinery sludges) which will become effective on May 2, 1991. You indicated that the sludge that currently exists in the surface impoundment would meet the definition of F037 if no changes are made. However, the Company plans to install equipment to convert the surface impoundment to an aggressive biological treatment unit. We agree that if all of the existing sludge is completely mixed with the liquids in the surface impoundment by May 2, 1991, then the resulting mixture would not meet the definition of F037. But, if sludge is present in the surface impoundment after May 2, 1991, then the unit will become regulated for F037. Uno-Ven's closure plan must discuss how it intends to demonstrate that all sludge in the surface impoundment has been completely mixed.

Uno-Ven must make sure that the proposed high-rate aeration system meets the requirements of Title 40 of the Code of Federal Regulations (CFR), Section 261.31(b)(2)(i). Such a system must use "intense mechanical aeration" to "completely mix the wastes." The unit must also employ a minimum of 6 horsepower per million gallons of treatment volume, and either have a hydraulic retention time no longer than 5 days, or a hydraulic retention time no longer than 30 days provided that the sludge generated from the unit is not hazardous by the Toxicity Characteristic. Aggressive biological treatment is most often a secondary treatment process. Therefore, Uno-Ven must be certain that its aeration system, which will be used as a primary treatment method, is capable of adequately mixing any and all sludge in the impoundment; dead spots should be eliminated or kept to a bare minimum. In addition, no sludge must be generated unless it can be shown that it does not exhibit the Toxicity Characteristic.

Your second question concerned what permits that Uno-Ven must obtain from the United States Environmental Protection Agency (U.S. EPA) to legally carry out closure activities. Since Uno-Ven's surface impoundment has in fact been used for treatment (gravitational settling) of process waters, Uno-Ven must

correct its PART A Application to include process code "T02", treatment in a surface impoundment. The U.S. EPA will not require any additional RCRA permits.

Under 40 CFR 265.112(d)(1), "The owner or operator must submit the closure plan to the Regional Administrator at least 180 days prior to the date on which he expects to begin closure of the first surface impoundment,...." To meet this requirement, the U.S. EPA is requesting that a closure plan for the surface impoundment be submitted as soon as possible.

In question 3, you indicated that under 40 CFR 265.113(a)(1)(i), delayed closure may be a viable option. In fact, delayed closure regulations are covered under 40 CFR 265.113(d) and (e), and do not appear applicable for this situation. Under 40 CFR 265.113(a), treatment or removal of all hazardous waste must be completed within 90 days after receiving the final volume of hazardous waste, or after approval of the closure plan, whichever is later. Under 40 CFR 265.113(a)(1)(i), the Regional Administrator may extend the final date when all hazardous wastes must be treated, removed from the unit, or disposed of as approved by the closure plan. Under 40 CFR 265.113(b), all closure activities must be completed within 180 days after receiving the final volume of hazardous waste or after approval of the closure plan, whichever is later. This time allowed for completion of closure may also be extended [40 CFR 265.113(b)(1)].

Question 4 concerned appropriate guidance for development of cleanup objectives for clean closure of the surface impoundment. To this end, please refer to the March 19, 1987 Federal Register, Vol. 52, No. 53, which amended interim status regulations for closing and providing postclosure care for hazardous waste surface impoundments.

In your March 1, 1991 letter, you state that the only demonstration necessary to show a changed character in the sludge is testing of newly generated sludge showing that it is no longer hazardous. Such testing is required to show that the sludges are not included in the F037 listing, however further testing (waste characterization) will be necessary to demonstrate clean closure. Uno-Ven must show that any treated sludge, remaining after closure activities, does not contain any Appendix VIII hazardous constituents at levels which present a threat to human health and environment. Only removing the hazardous characteristic is not sufficient to demonstrate clean closure. It may not be necessary to analyze samples for all Appendix VIII hazardous constituents. The closure plan must consider all hazardous constituents that may be reasonably expected to be in or derived from the wastes managed in the surface impoundment. U.S. EPA "Guidance on Petroleum Refinery Waste Analyses for Land Treatment Permit Applications", April 3, 1984, by John Skinner, lists Appendix VIII constituents which can be found in petroleum refinery wastes. This list must be considered in Uno-Ven's clean closure plan.

Questions regarding this letter may be directed to Todd Gmitro, at 312/886-5909.

Sincerely,

ORIGINAL SIGNED BY/
KARL E. BREMER

Karl E. Bremer, Chief
RCRA Permitting Branch

cc: Charlie Zeal, IEPA

RCRA PERMITS	TYP.	AUTH.	IL CHIEF	IL CHIEF	MI CHIEF	MR. YI CHIEF	OH CHIEF	REB CHIEF	O.R. A.D.D.	WMD DIR
INIT. DATE	TH 3-14-91	TH 3-14-91	<i>[Signature]</i> 3/14/91	<i>[Signature]</i> 3/15/91				<i>[Signature]</i> 3/14/91		

3-7-91

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, REGION V
230 South Dearborn Street
CHICAGO IL 60604



FACSIMILE REQUEST AND COVER SHEET

PLEASE PRINT IN BLACK INK ONLY

TO Jim Michael, Chief Disposal Technology Section
Permits and States Programs Division

OFFICE/PHONE 05-340
382-2231

MACHINE NR: 8 252-0096
VERIFICATION NR:

REGION/LAB Headquarters U.S. EPA Washington D.C.

FROM Todd Gmitro

PHONE 312/886-5909

MAIL CODE
5HR-13

OFFICE RCRA, Permitting, ILL

DATE 3-7-91

NUMBER OF PAGES TO INCLUDE THIS COVER SHEET
16

Please number all pages

INFORMATION FOR SENDING FACSIMILE MESSAGES

EQUIPMENT	FACSIMILE NUMBER	VERIFICATION NUMBER
PANAFAX PX-100	FTS: 886-9096(auto) Comm: (312)886-9096	FTS: 886-3096 Comm: (312)886-3096
XEROX 400	FTS: 886-9413(manual) Comm: (312)886-3096	FTS: 886-3096 Comm: (312)886-3096

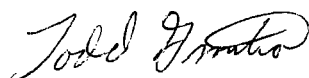
54

2
Dear Mr. Michael:

As requested by you in our phone conversation on March 7, 1991, I am sending you information regarding UNO-VEN Company (formerly UNOCAL) and their surface impoundment which is being impacted by the F037 listings. Enclosed are three letters, which will provide you with an overview of the situation and the regulatory interpretations I have made. Specifically, There is a February 7 letter describing the proposed closure method, a March 1 letter with questions UNO-VEN's lawyer has regarding regulatory issues, and my draft response to these questions. I would like to know if you concur with my decision that UNO-VEN's proposed aggressive biological treatment could result in the non-listing of sludges within their impoundment. If you feel that this closure option should not, or is not available to facilities, then I will need to relay that information to UNO-VEN as soon as possible.

Please call me, at 312/886-5909, if you require additional information.

Sincerely,



Todd Gmitro
Illinois Section
RCRA Permitting Branch

10
GARDNER, CARTON & DOUGLAS

SUITE 3400-QUAKER TOWER

321 NORTH CLARK STREET

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WASHINGTON, D.C.

DENVER, COLORADO

SOUTHFIELD, MICHIGAN

WRITER'S DIRECT DIAL NUMBER

LEE R. CUNNINGHAM
(312) 245-8742

March 1, 1991

BY FACSIMILE AND FEDERAL EXPRESS

George Hamper
Chief, Illinois RCRA Permit
Section
5HR13
Region V EPA
230 South Dearborn
Chicago, IL 60604

Re: UNO-VEN Aggressive Biological Treatment Closure

Dear Mr. Hamper:

We appreciated the opportunity to meet with you and Mr. Gmitro on February 11th to discuss UNO-VEN's plans for the closure of the stormwater basin at the Chicago Refinery. As I indicated at the meeting, I hope that we can work together on implementing a reasonable plan to demonstrate clean closure and allow the continued use of the basin for the retention and subsequent treatment of non-hazardous stormwater and process waters.

As you know, subsequent to our meeting with you, we also met with representatives of the Illinois Environmental Protection Agency ("IEPA"). Our understanding, based on both meetings, is that UNO-VEN will need to work with both the IEPA and the U.S. EPA in order to implement UNO-VEN's plans. In general, we understand that the U.S. EPA will be the lead agency regarding the RCRA closure of the basin, whereas potentially necessary air and water permits will have to be obtained from the IEPA. We further understand that the U.S. EPA will be requesting the IEPA's input on issues involved in the RCRA closure.

As a result of our meetings and subsequent phone conversations, some questions have arisen which may be of critical importance to UNO-VEN's successful implementation of its

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Mr. Hamper
March 1, 1991
Page 2

plans. Further, as we discussed, given the short time prior to the effective date of the F037 listing rule, UNO-VEN will have to begin a number of actions immediately, without the benefit of an approved closure plan. Because of that, to the extent possible, UNO-VEN would appreciate U.S. EPA's views on various issues involved in the closure. First, you have indicated reservations regarding whether those sludges which are presently in the basin can be rendered exempt from the F037 listing through subsequent exposure to aggressive biological treatment. Further, you have raised questions regarding what sort of demonstration UNO-VEN would be required to make to establish that the character of the pre-existing sludges will be changed through the subsequent aggressive biological treatment so as to appropriately fall under the exemption.

Your reservations appear to have been based at least in part upon a belief that a significant portion of the pre-existing sludges would remain at the bottom of the basin during the course of treatment. As Mr. Khara and I explained to you, that is not UNO-VEN's intent. UNO-VEN believes that the combination of dredging and high rate aeration during the course of treatment will effectively resuspend all of the pre-existing sludges and subject it to the treatment process. UNO-VEN believes that upon resuspension during the course of aggressive biological treatment, the materials are no longer properly considered a sludge under the F037 rules and that the sludge will not be regenerated until treatment is complete. The subsequently generated and treated non-toxic sludge is then properly characterized as having been generated from aggressive biological treatment and is, therefore, exempt from the F037 listing. 40 C.F.R. § 261.31.

UNO-VEN further believes that the only demonstration necessary to establish the changed character of the sludge is testing of the newly generated sludge which shows that it is no longer RCRA-hazardous. Since the only reason the sludge is currently hazardous is that the TCLP for benzene has been exceeded, we will thus only need to show that the benzene has been treated to below TCLP levels. I believe that you will find that the preamble to the F037 listing indicates that efforts to define the scope of that listing through the character of the sludge proved inadequate due to the variability of the data and the potential that a source could potentially circumvent the listing through manipulation of a process to meet the exempting characteristic while the waste could still adversely impact the environment. The U.S. EPA, therefore, determined that the scope

Mr. Hamper
March 1, 1991
Page 3

is more properly defined by the process through which the sludge is generated.

Second, the IEPA has raised a question regarding appropriate cleanup objectives for the RCRA clean closure of the basin. Such objectives derive from the closure performance standard of 40 C.F.R. § 265.111 which generally requires that the closure be protective of human health and the environment. In this regard, UNO-VEN believes that the proposed closure will meet this standard.

One of the primary goals of UNO-VEN's plan is to retain the ability to use the basin for the collection and subsequent treatment of non-hazardous stormwater and process flows following clean closure. Given the nature of the operations and the character of the property at and surrounding the facility, those flows are anticipated to contain constituents at levels which, while not hazardous, may well exceed stringent cleanup objectives. UNO-VEN believes that the establishment of reasonable cleanup objectives can, and properly should, be based upon a recognition of this subsequent use. Little, if any, environmental benefit would derive from requiring the basin to be returned to a pristine condition for some moment in time prior to the lawful, continued use of the basin after clean closure for less than pristine waters. For that reason, UNO-VEN believes that appropriate cleanup objectives should be no more stringent than those levels of constituents which would be anticipated in the basin after cessation of the receipt of hazardous flows and completion of the aggressive biological treatment.

UNO-VEN recognizes that as part of its RCRA closure plan, it will be proposing specific cleanup objectives for U.S. EPA approval. However, because of the time constraints imposed by the May 2, 1991 listing of F037, UNO-VEN would appreciate your comments regarding its philosophical approach for proposing cleanup objectives for purposes of expediting closure approval.

Third, apparently based at least in part on concerns regarding appropriate cleanup objectives and their attainability, the IEPA suggested that it may be more appropriate for UNO-VEN to seek delayed closure rather than clean closure. UNO-VEN has examined the delayed closure rules adopted by the Illinois Pollution Control Board ("Board") on July 2, 1990, and it appears that such relief may be unavailable to UNO-VEN. While the rules generally appear to allow the delayed closure of the basin upon the filing of an adjusted standard petition seeking such relief,

Mr. Hamper
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Page 4

it does not appear that UNO-VEN can meet the requirements for timely filing.

Pursuant to 35 Ill. Adm. Code 725.213(d)(4), which is identical in substance to 40 CFR 265.113(d)(4), a petition for delayed closure must be filed either within 90 days of the effective date of the state's delayed closure rule or at least 180 days prior to the receipt of the final volume of hazardous waste, whichever is later. Both dates have already passed: the former in October and the latter in November.

Fourth, during our meeting with you, we raised the question of what federal permits, if any, UNO-VEN would need to obtain to carry out its proposed plan. Based upon our discussion of that issue, I understood that upon UNO-VEN's correction of its interim status application, there would be no need for any federal permits. UNO-VEN also does not see any such need. However, it would appreciate confirmation of this.

My overall impression from our meetings with the agencies is that both agencies are generally supportive of the actions UNO-VEN has proposed to take and has already begun, but that there are concerns as to how its proposal can be implemented consistent with the RCRA regulations. UNO-VEN believes that the issues raised above should not preclude successful implementation and that its positions are well-founded under the RCRA program. However, UNO-VEN would greatly appreciate learning your views on these issues. More particularly:

1. Consistent with EPA's rule, UNO-VEN's "[s]ludges...[will] have been treated in aggressive biological treatment units...exempted from this [F037] listing." 40 C.F.R. § 261.31, 55 Fed. Reg. 46396 (Nov. 2, 1990). Does the U.S. EPA agree that the aggressive biological treatment as proposed within the basin will exempt the pre-existing as well as the sludge generated subsequent to sewer separation from the F037 listing after the sludges have been rendered non-toxic?
2. Presuming that the interim status application for the basin that is being corrected to indicate that treatment takes place within the basin is satisfactory, does U.S. EPA agree with UNO-VEN that there are no permits which UNO-VEN must obtain from U.S. EPA in order to legally carry out the various elements of its plan for closure and subsequent use of the basin?

GARDNER, CARTON & DOUGLAS

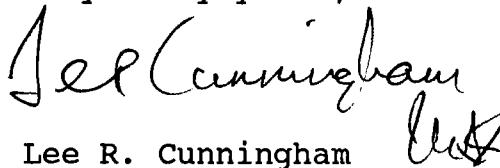
Mr. Hamper
March 1, 1991
Page 5

3. Is delayed closure a viable option under a U.S. EPA approved closure plan: "if [UNO-VEN] demonstrates that: (1)(i) The activities required to comply with this paragraph will, of necessity, take longer than 90 days to complete"? 40 C.F.R. § 113(a)(1)(i). Under this option, it appears that the basin can be kept operational until it is closed.
4. Does EPA concur that the following EPA Guidance is appropriate regarding the development of cleanup objectives for clean closure of the basin:
 - "Closure of Hazardous Waste Surface Impoundments"
 - "Guidance Document for Cleanup of Surface Impoundment Sites" (even though this document is not a RCRA guidance document and contains an RI/FS evaluation process, parts of it appear to be helpful in guiding the closure)
5. Are there any other issues or matters which U.S. EPA believes we should resolve in order to ensure UNO-VEN's successful, and lawful, completion of its proposal?

I understand that you may not have immediate or complete answers to these questions. However, UNO-VEN would appreciate whatever guidance or assurance you can provide at your earliest convenience.

Once again, we appreciate your willingness to meet and work with UNO-VEN on the implementation of its plans. If you have any questions or desire any additional information, please call me.

Very truly yours,


Lee R. Cunningham

cc: Charles Zeal, IEPA

HOLLEB & COFF

ATTORNEYS AT LAW

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WRITER'S DIRECT DIAL (312) _____

January 29, 1991

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LAURIE A. WRIGHT

OF COUNSEL
JOSEPH W. BERNSTEIN
WILLIAM R. COTTLE
ALEX H. DOLNICK
JILL A. OLSWANGER
MARTIN H. REDISH**

*ADMITTED IN OHIO ONLY
**ADMITTED IN NEW YORK ONLY

Lawrence W. Eastep
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, IL 62794-9276

RE: Southern California Chemical Co.
Union, IL

Dear Mr. Eastep:

We represent Philipp Brothers Chemical Co., the purchaser of certain of the assets of Southern California Chemical Co. ("SCC"). I am writing in response to your letters of June 29, 1990 and December 13, 1990 which, in part, requested that the certification form contained in the closure plan for the above-referenced SCC facility be revised to reflect certain potential releases from solid waste management units. Specifically, you requested that the certification be revised to include, as appropriate, ten incidents of possible releases at the SCC facility.

For your information, our client acquired certain of the assets of SCC, including the Union facility, in 1984. The suspected releases identified in your letters all involve operations from 1975 through 1980, which was during prior ownership of the facility. The facility has been closed and personnel who may have personal knowledge concerning these incidents are no longer in our employ. Similarly, we have reviewed our files and have found no detailed information concerning these past incidents and we have been unable to obtain more detailed information from the Agency files, as the Agency has not yet responded to our Freedom of Information Act request for information about the site. After careful consideration and review of the circumstances, we therefore believe that it would be inappropriate at the present time to revise our certification concerning these past suspected releases. Note, however, that the April, 1979 incident referenced in your June 29 letter was addressed in the initial certification.

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FEB 01 1991

IEPA-DLPC

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ATTORNEYS AT LAW

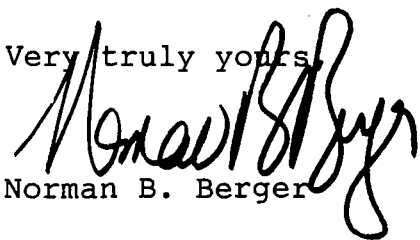
January 29, 1991
Lawrence W. Eastep
Page 2

We would like to point out that many of these past incidents, as you described them, may not be "releases from solid waste management units" at all. For example, the June, 1975, June, 1977, and August, 1979 chemical spills do not appear to involve wastes or waste management units. In addition, there is nothing to indicate that these incidents involve regular and systematic releases into the environment such that they would fit under the broad RCRA definition of releases from solid waste management units.

Therefore, unless we receive any additional information, we must stand upon the certification previously prepared and submitted to you in April, 1990. Our client intends to fully cooperate with IEPA concerning this matter, would appreciate the opportunity to discuss this matter further, and would welcome any input you may have.

If you have any questions or need additional information, please contact me.

Very truly yours,


Norman B. Berger

NBB:fmd

George A



Illinois Environmental Protection Agency · P.O. Box 19276, Springfield, IL 62794-9276

217/782-6762

Log No. C-417-M-1
Received: July 31, 1989

Refer to: 1978030004--Will County UNOCAL #1
ILD0451550567
RCRA-Closure

October 26, 1989

C. R. Plug
Superintendent
Health, Environmental & Safety
UNOCAL
Chicago Refinery
Lemont, IL 60439

Dear Mr. Plug:

The Phase I Closure Report and the Phase IIa and Phase IIb Work Plan submitted by UNOCAL and prepared by Environmental Resources Management-North Central, Inc. have been reviewed by this Agency. Due to the following deficiencies the Phase I Closure Report and the Work Plan for Phase IIa and Phase IIb have been disapproved.

A. PHASE I CLOSURE REPORT

1. The closure report must include a scale drawing of the facility which shows the location of the entire drainage ditch as required by item 4.A. of the August 31, 1988 Agency approval letter.
2. The closure report must include a recent analysis of the wastes which UNOCAL intends to apply to the land treatment areas. The analysis must be less than one year old and include all the parameters identified in Tables 3-4 through 3-8 in the approved closure plan.

Note: UNOCAL may find it convenient to also meet the analytical requirements for Phase II at this time. (See item 5.F. of August 31, 1988 approval letter and item B.4. of this letter.)

3. The potential migration pathways must be clearly identified on maps of the land treatment areas.
4. A contour drawing of the existing surface elevations of the undisturbed soils for each treatment area must be submitted as proposed in Section 4.1.9, item E. of the approved closure plan.



5. As required by item 4.c. of the Agency approval letter of August 31, 1988, UNOCAL was to substantiate that the treatment zone is three (3) feet deep. However, data presented in Table 3 of the closure report indicates the treatment zone is up to five (5) feet deep in some locations. 35 IAC Part 724.371(c) requires the treatment zone to be no more than five (5) feet deep. UNOCAL must not apply waste to areas already meeting the maximum depth requirements. A written plan must be submitted to the Agency describing how this will be done.
6. Sampling of runoff was not done after the required three rainfall events of 1-1/2 inches (section 4.1.2 of the approved closure plan) due to the lack of heavy rainfall events. The runoff should continue to be sampled until these requirements are met. The Agency does not feel one sample location for each land treatment area is adequate. Therefore, more sample locations must be proposed to better define migration of contaminants through runoff.
7. Section 5.2 of the Phase I Closure Report indicates some of the runoff sample buckets were filled with silt and were not analyzed. The Agency is concerned about a possible erosion problem in this area due to the fact that the slopes of the four land treatment areas each exceed the recommended maximum slope of 5% (RCRA Guidance Document - Land Treatment, Draft, Received by IEPA January 2, 1986). A discussion must be included with the resubmittal to explain why these buckets filled with silt during light rainfall events.
8. Laboratory reports must be submitted to support the analytical data presented in the Phase I and II reports.
9. Two methods are listed on Table 12 for total metals analysis. UNOCAL must specify which one of these methods was used to obtain their results presented in Tables 26 through 33.

B. PHASE IIa and IIb

1. Water and wastewater sludge has been deleted from the list of wastes to be applied to the land treatment areas. UNOCAL must elaborate as to what is being done with this waste and why it is no longer going to be applied.
2. The Work Plan for Phase II must include waste characterization for all the wastes that will be applied to the land treatment areas. These wastes are: storm water pond dredging, clear well sludge, cooling tower sludge, and heavy oil sludge.
3. As required by item 5.G. of the Agency approval letter, the detection limits must be specified for the PAHs referenced in Section 4.2.2.4 of the approved closure plan. The proposal in Section 2.0 to address only storm water pond dredgings now and the remaining wastes 6 months before application to the land treatment areas is not acceptable.



4. A list of volatile and semi-volatile solvents must be supplied. The Phase II Work Plan indicates in Section 2.2 and on Table 4 that these solvents will be tested for but there is no mention of the volatile and semi-volatile solvents that this applies to. This was required by item 5.F. of the Agency approval letter.
5. The soil sampling plan is inadequate. There are too few sample locations for both the treatment zone and the undisturbed soils. More sample locations must be proposed for Agency approval.
6. The soil samples must not be composited. Compositing of soil samples will not allow detection of "hot spots".

THE FOLLOWING COMMENTS REFER TO THE GROUNDWATER MONITORING PROGRAM CONTAINED IN THE PHASE II PROPOSAL.

7. Section 4.0, beginning on page 9 of the plan, outlines the proposal for monitoring the shallow well system. The proposed system includes 6 existing wells identified as SW-1, SW-4, SW-5, SW-7, SW-8, and SW-9. The map plan (Figure 2) indicates the locations of the proposed wells. Information necessary to complete this review may be found in documents currently on file. However, the groundwater monitoring program contained in the Phase II Proposal must be a "stand-alone" document. All the information necessary to carry out the groundwater monitoring program must be included in this document. Considering the requirements of a groundwater monitoring system under Section 725.190 through 725.194 inclusive, the following comments are made:
 - a. Construction details (as-built diagrams) for each well were not provided. This information must be submitted to evaluate the physical integrity of the well, materials of construction, screen and sand pack thickness, etc. Boring logs must also be included to correlate screen placement with targeted monitoring zones.
 - b. No hydrogeologic, geologic or topographic information was submitted to justify the current monitoring well locations. Monitoring wells must be located immediately downgradient of the regulated units to ensure detection of any hazardous wastes or hazardous waste constituents migrating from the units. UNOCAL must propose additional wells along with a justification for their location and spacing.
 - c. The current sampling and analysis operating procedures were referenced, however, the specific document and any revisions were not provided nor correctly cited.

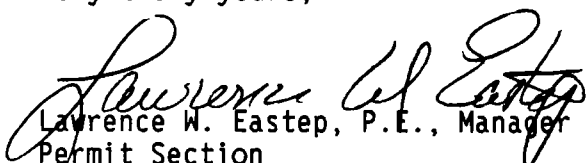


Page 4

- d. The proposed parameter list was not justified. At a minimum, the first year parameter list should be based on the compounds detected in the treatment zone samples from horizon 1.(iii) page 7 and any compound detected in the undisturbed soil samples proposed at the top of page 8 of the Work Plan for Phase IIa and IIb. Sampling should be conducted quarterly and semi-annually thereafter.
- e. Data evaluation procedures were not included for identifying piezometric changes and determining significant impacts to groundwater quality.
- f. Groundwater monitoring data must be evaluated and reported quarterly to the Agency within 60 days of each sampling event. The reports must include a determination of the groundwater quality downgradient of the regulated units, directions and rate of groundwater movement and additional assessment actions necessary for determining the concentrations and rate of migration of any contaminants detected.

The IPCB is expected to adopt new regulations concerning delay of closure for hazardous waste management land disposal units. The USEPA has already adopted regulations as of the August 14, 1989 Federal Register (40 CFR Parts 264, 265, and 270) and the IPCB is expected to adopt these regulations in early 1990. Under these new regulations a Part B application will be required to operate the land treatment areas for receipt of non-hazardous waste until final closure occurs. The Agency is hereby requesting a meeting with UNOCAL and other appropriate personnel to discuss what further action should be taken in light of these new regulations. Therefore, by November 15, 1989, UNOCAL must contact David Deisher at 217/782-6762 to arrange a meeting.

Very truly yours,


Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:DWD:sf/3702k,28-31

cc: Maywood Region
Division File-RCRA Closure
USEPA Region V -- George Hamper
Compliance Section
Andy Vollmer
Ken Liss
Cindy Davis
Gene Taylor, P.E., ERM-North Central, Inc.
Enforcement

Q-417-M-11

Unocal Refining & Marketing Division
Unocal Corporation
Chicago Refinery
Lemont, Illinois 60439
Telephone (312) 257-7761

HES 299-89

USEPA

UNOCAL 76

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P 994 489 335

Thomas B. Williams
Manager, Chicago Refinery

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AUG 8 1989
OFFICE OF RCRA
WASTE MANAGEMENT DIVISION
EPA, REGION V

July 28, 1989

Mr. Lawrence W. Eastep
Illinois Environmental Protection
Agency
Division of Land Pollution
Control
P. O. Box 19276
Springfield, IL 62794-9276

Phase I Closure Report for the
Unocal, Chicago Refinery
Land Treatment Facility

Dear Sir:

Attached are three copies of the Phase I Closure Report and three copies of the the Work Plan for Phase IIa & IIb Closure for the Unocal, Chicago Refinery Land Treatment Facility.

Should you have any questions or comments, please contact L. D. Erchull at the above telephone number.

Very truly yours,

C. R. Plug

C. R. Plug
Superintendent
Health, Environment & Safety

LDE/las

Attachment

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AUG 09 1989

U. S. EPA, REGION V
SWB - PMS

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JUL 31 1989

IEPA-DLPC

Mary M.



Illinois Environmental Protection Agency · P. O. Box 19276, Springfield, IL 62794-9276

217/782-6762

Refer to: 1978030004 -- Will County
UNOCAL #1
ILD041550567
RCRA - Closure

July 11, 1989

C. R. Plug
Superintendent, Health, Environment & Safety
UNOCAL
Chicago Refinery
Lemont, Illinois 60439

Dear Mr. Plug:

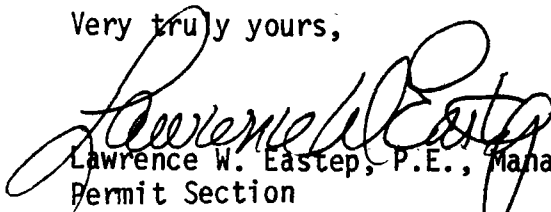
The Agency is in receipt of the Phase I closure report dated June 30, 1989 and received July 5, 1989.

As required by Special Conditions 3 and 6 of the approved closure plan, dated August 31, 1988, the summary of each phase must be accompanied by the proposal for the next phase.

Since the Phase II proposal was not included with the UNOCAL submittal dated June 30, 1989, it is being returned. The Phase I summary report and the Phase II proposal should both be submitted by the July 30, 1989 deadline specified in Special Condition 6 of the August 31, 1988 approved closure plan.

Should you have any questions regarding this matter, please contact Rob Watson at 217/782-6762.

Very truly yours,


Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:WRW:jab/2404k/2

Enclosure

cc: Maywood Region
Division File - Closure
Andy Vollmer
Rob Watson
Cindy Davis
USEPA Region V -- George Hamper
USEPA Region V -- Mary Murphy
Compliance Section
Tim Kluge, DWPC Permit Section

Mary M.



Illinois Environmental Protection Agency

P. O. Box 19276, Springfield, IL 62794-9276

217/782-6762

Log No. C-417

Received: June 2, 1988

Refer to: 1978030004 -- Will County
UNOCAL #1
ILD041550567
RCRA-Closure

August 31, 1988

D. W. Bruckert
Supervisor, Environmental Services
UNOCAL
Chicago Refinery
Lemont, Illinois 60439

Dear Mr. Bruckert:

The closure plan submitted by UNOCAL and prepared by ERM North Central has been reviewed by this Agency. Your final closure plan to close the hazardous waste land treatment areas is hereby approved subject to the following conditions.

1. When closure is complete the owner or operator must submit to the Agency certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. This certification must be received at this Agency within 60 days after closure.

The attached closure certification form must be used. Signatures must meet the requirements of 35 Ill. Adm. Code Section 702.126. The independent engineer should be present at all critical, major points (activities) during the closure. These might include soil sampling, soil removal, backfilling, final cover placement, etc. The frequency of inspections by the independent engineer must be sufficient to determine the adequacy of each critical activity. Financial assurance must be maintained for the units approved for closure herein until the Agency approves the facility's closure certification.

The Illinois Professional Engineering Act (Ill. Rev. Stat., Ch. 111, par. 5101 et. seq.) requires that any person who practices professional engineering in the State of Illinois or implies that he (she) is a professional engineer must be registered under the Illinois Professional Engineering Act (par. 5101, Sec. 1). Therefore, any certification or engineering services which are performed for a closure plan in the State of Illinois must be done by an Illinois P.E.



Plans and specifications, designs, drawings, reports, and other documents rendered as professional engineering services, and revisions of the above must be sealed and signed by a professional engineer in accordance with par. 5119, sec. 13.1 of the Illinois Professional Engineering Act.

Also along with closure certification, to document the closure activities at your facility, please submit a Closure Documentation Report which includes:

- a. Survey plat showing location of disposal units (required by 35 Ill. Adm. Code, Subtitle G, Sections 725.216 and 725.219 as amended February 5, 1987).
- b. A copy of the document (notation in deed or other document examined during title searches) in which the notification required under Section 725.219(b) as amended February 5, 1987.

The original and two (2) copies of all certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Division of Land Pollution Control -- #24
Permit Section
2200 Churchill Road
Post Office Box 19276
Springfield, Illinois 62794-9276

2. UNOCAL shall implement the Illinois EPA approved Groundwater Monitoring Plan
3. Following the completion of each phase of this closure plan, UNOCAL shall submit a summary report for that phase and a proposal for the subsequent phase study program. The Agency shall consider each summary report and proposal as a modification to this approved Closure Plan.
4. In addition to the items identified in Section 4.1.9 of the closure plan, the Phase I Summary Report must include the following:
 - A. A scale drawing of the facility which shows the location of the entire drainage ditch and the point at which the run-off from the land treatment areas will be sampled.
 - B. A scale drawing of the facility which shows the sampling grid, sampling nodes, and the distance between nodes.



- C. The depth of the treatment zone (from both the initial and existing land surfaces) based on the analytical results obtained from Phase One. UNOCAL needs to substantiate the claim in Section 3.4.1. that the treatment zone is 3 feet deep.
 - D. Recent analyses of the waste which UNOCAL intends to apply to the land treatment areas. The analyses must be less than one year old and include all of the parameters identified in Tables 3-4 to 3-8 in the closure plan.
5. In addition to the items specified in Section 4.2 of the Closure plan, the Phase II proposal shall include the following:
- A. A shallow groundwater monitoring system designed to monitor the perched water table and the sand seams present in the till.
 - B. Table 4-5 needs to include the hazardous constituents of the wastes (i.e. lead, cadmium, chromium, arsenic, PAH's, solvents).
 - C. Section 4.2.1.2. states that wastes may be directly applied to the soil plots (without dewatering). UNOCAL need to provide a detailed description of this process.
 - D. Section 4.2.1.3 lists the parameters for which the wastes will be analysed. UNOCAL needs to describe the rational used in choosing these parameters.
 - E. UNOCAL needs to specify the PAH's which will be analyzed in table 4-6.
 - F. The wastes must also be analysed for volatile and semi volatile solvents using GC/MS analytical methods. These parameters must be included in table 4-6.
 - G. UNOCAL needs to specify the detection limits for PAHs referenced in Section 4.2.2.4.
 - H. UNOCAL needs to specify the allowable limits for chromium, lead, and arsenic referenced in Section 4.3.5.
6. UNOCAL shall submit the summary reports and proposals for the subsequent phase in accordance with the following schedule:

Phase I	July 30, 1989
Phase IIa, IIb	November 30, 1989
Phase IIc, III	March 30, 1990



Page 4

7. The placement of nonhazardous wastes on the land treatment areas shall not interfere with the degradation, transformation, or immobilization of the hazardous constituents within the treatment zone.
8. In accordance with 35 IAC 703.121(b) UNOCAL must obtain a permit during the post-closure period. UNOCAL must submit this post-closure permit application with the Phase III operating plan proposal. Although the specific information requirements for a Part B post-closure permit application are within the discretion of the Agency, the following are examples of typical requirements:
 1. A copy of the post-closure inspection schedule (703.183(e));
 2. A copy of the post-closure plan (703.183(m));
 3. Documentation that the notices required under 725.219 have been filed for closed units;
 4. cost estimates for post-closure and a copy of the post-closure financial assurance mechanism that will be used (703.183(p));
 5. Groundwater monitoring and protection data (703.185);
 6. Soil core monitoring plan.

Additional information requirements have been imposed by the Hazardous and Solid Waste Amendments of 1984. These requirements include the following, as a minimum:

1. Information on location of, and releases from, solid waste management units at the facility, regardless of the time at which waste was placed in such units (724.190);
 2. A demonstration of financial responsibility for any corrective action needed for releases of hazardous waste or constituents from any solid waste management unit at the facility (724.201);
 3. Information on the potential for the public to be exposed to hazardous wastes or hazardous constituents through releases related to any and all landfills and surface impoundments containing hazardous wastes at the facility (703.186).
9. The "Certification Regarding Potential Releases from Solid Waste Management Units" which you submitted has been forwarded to the USEPA for possible future action. The approval of this closure plan neither approves nor disapproves of the aforementioned "Certification".



10. No later than sixty (60) days after the completion of the established post-closure care period for each hazardous waste disposal unit, the owner or operator shall submit to the Agency, by registered mail, a certification that the post-closure care period for the hazardous waste disposal unit was performed in accordance with the specifications in the approved post-closure plan per 35 IAC, Section 725.220 (as amended February 5, 1987).
11. Owners and operators of waste management units which received wastes after July 26, 1982 or that certified closure according to 35 IAC 725.215 after January 26, 1983 are required to submit an application for a Post-Closure Permit meeting the requirements of 35 IAC, Part 724 upon request from the IEPA unless it is demonstrated that closure by removal has been achieved. (35 IAC 703.121(b), 40 CFR 270.1(b) and (c)).
12. If the Agency determines that implementation of this closure plan fails to satisfy the requirements of 35 Ill. Adm. Code, Section 725.211, the Agency reserves the right to amend the closure plan.
13. Under the provisions of 29 CFR 1910 (51 FR 15,654, December 19, 1986), cleanup operations must meet the applicable requirements of OSHA's Hazardous Waste Operations and Emergency Response standard. These requirements include hazard communication, medical surveillance, health and safety programs, air monitoring, decontamination and training. General site workers engaged in activities that expose or potentially expose them to hazardous substances must receive a minimum of 40 hours of safety and health training off site plus a minimum of three days of actual field experience under the direct supervision of a trained experienced supervisor. Managers and supervisors at the cleanup site must have at least an additional eight hours of specialized training on managing hazardous waste operations.



Page 6

Should you have any questions regarding this matter, please contact Rob Watson at 217/782-6762.

Very truly yours,

A handwritten signature in cursive script, reading "Lawrence W. Eastep".

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:WRW:rmi/68-73

Attachment

cc: Maywood Region
Division File - Closure
Andy Vollmer
Rob Watson
Cindy Davis
USEPA Region V -- Jim Mayka
USEPA Region V -- Mary Murphy
Compliance Section



ATTACHMENT

This statement is to be completed by both the responsible officer and by the registered professional engineer upon completion of closure. Submit one copy of the certification with original signatures and three additional copies.

Closure Certification Statement

Closure Log C-417

The hazardous waste management D81, land treatment areas at the facility described in this document have been closed in accordance with the specifications in the approved closure plan. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

The Owner/Operator hereby certifies that he has recorded the notation specified in 35 Ill. Adm. Code, Section 725.219(b)(1) as amended February 5, 1987.

USEPA ID Number

Facility Name

Signature of Owner/Operator

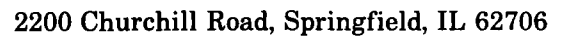
Name and Title

Signature of Registered P.E.

Name of Registered P.E. and Illinois
Registration Number

Date

LWE:WRW:rmi/2588j/74



LD 041 550 567

JUN 07 1988

USEPA ID #:

Dear Sir,

IL 532-1428
LPC 217 11/85



217/782-6762

Refer to: 1978030004 -- Will County

UNOCAL

Closure Plan Approved: February 27, 1986 Log #C-193

Modified Closure Plan Approved: January 30, 1987 Log #C-193-M-1

ILD041550567

RCRA-Closure

January 13, 1988

UNOCAL Corporation

Attn: D. W. Bruckert

Chicago Refinery

Lemont, Illinois 60439

Dear Mr. Bruckert:

The subject hazardous waste management facility was inspected by a representative of this Agency on April 13, 1987. The inspection revealed that the closure activity was completed in accordance with the approved closure plan dated February 27, 1986 and the modified closure plan dated January 30, 1987.

Certification that the surface impoundment at the UNOCAL Chicago Refinery had been closed in accordance with the approved closure plan by the owner/operator, John K. Bassett, and an independent registered professional engineer, James W. Polich, of Illinois was received at this Agency January 22, 1987.

The Agency has determined that the closure of the surface impoundment has apparently met the requirements of Interim Status Standards, 35 Ill. Admin. Code, Part 725 (40 CFR, Part 265). Please note, the Agency has approved your modified Part A application dated March 9, 1987 to reflect the status change due to completed closure activities.

This facility must continue to meet the requirements of 35 IAC Parts 724 and 725 for the Hazardous Waste Land Treatment Unit at the facility.

Art K

DISCLOSED

FEB 02 1988

U. S. EPA, REGION V
SWB — PMS

Jim Mayka will have partial entered into HWDMS

COPY/



Page 2

If you have any questions, please contact Rob Watson at 217/782-6762.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Lawrence W. Eastep".

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:WRW:jab/104j/2-3

cc: Northern Region
USEPA Region V, Mary Murphy
USEPA Region V, Art Kawatachi
James Polich, P.E.
Division File
Financial Assurance Unit
Compliance Monitoring
Rob Watson

Closure 417

Refining & Marketing Division
Unocal Corporation
Chicago Refinery
Lemont, Illinois 60439
Telephone (312) 257-7761

ENV 98-88

UNOCAL 

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
#P 296 346 388

Thomas B. Williams
Manager, Chicago Refinery

June 1, 1988

ILD 041550 567

JUN 13 1988

U. S. EPA, REGION V
SWB - FMS

Mr. Lawrence W. Eastep
Division of Land Pollution
Control
Permit Section
2200 Churchill Road
Springfield, IL 62706

Dear Sir:

Land Treatment Area
Closure Plan

Attached are three copies of a closure plan for the Unocal,
Chicago Refinery Land Treatment Facility. Should you have any
questions or desire a meeting to discuss the closure plan, please
contact L. D. Erchull at the above telephone number.

Very truly yours,



D. W. Bruckert, Supervisor
Environmental Services

LDE/rm

Attachment

PUBLIC
NOTICE
80037
6/10/88

RECEIVED
JUN 02 1988
IEPA-DLPO



Illinois Environmental Protection Agency 2200 Churchill Road, Springfield, IL 62706

217/782-6762

Refer to: 2010450021 -- Winnebago
Regal Beloit Corporation
Closure Plan Approved: January 30, 1987 Log #C-285
RCRA-Closure

November 9, 1987

RECEIVED

NOV 17 1987

Mr. Terry E. Pearson
Regal Beloit Corporation
P.O. Box 38
South Beloit, IL 61080

SOLID WASTE BRANCH
U.S. EPA, REGION V

Dear Mr. Pearson:

The subject hazardous waste management facility was inspected by a representative of this Agency on October 5, 1987. The inspection revealed that the closure activity was completed in accordance with the approved closure plan dated January 30, 1987.

Certification that the container storage area (S01) had been closed in accordance with the approved closure plan by the owner/operator, Henry W. Knueppel, and an independent registered professional engineer, D.R. Schwegel, P.E., of Illinois was received at this Agency September 4, 1987.

The Agency has determined that the closure of the container storage area has apparently met the requirements of Interim Status Standards, 35 Ill. Admin. Code, Part 725 (40 CFR, Part 265).

This facility is no longer subject to 35 Ill. Adm. Code Section 725 Subpart I Use and Management of Containers and Section 722 - Standards Applicable to Generators of Hazardous Waste.

If you have any questions, please contact Karen Nachtwey at (217)782-0892.

Very truly yours,

Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:KEN:st:3918g,73

cc: Rockford Region
USEPA Region V, Mary Murphy
USEPA Region V, Art Kawatachi
D.R. Schwegel, P.E.
Division File
Financial Assurance Unit
Compliance Monitoring

Generator only
for filing

Log No. 6-10244-1
Received December 1, 1986

RECEIVED

FEB 04 1987

U.S. EPA, REGION V

Illinois Environmental



155-501
10039 Perline (10039)
1987

10039 Perline (10039)
1987

10039 Perline (10039)
1987

10039 Perline (10039)
1987

10039 Perline (10039)
1987

10039 Perline (10039)
1987

COPY

Page 3

Should you have any questions regarding this matter, please contact Bob Watson
at 217/793-6783.

Very truly yours,

Lawrence S. Foster, P.E., Manager
Recirculation
Division of Air Pollution Control

Enclosure (10/10/83)

W/F
Attachment

cc: Southern Region
Division Five - Chicago
Environmental Assessment Unit
USEPA Region V -- Jim Noyes
USEPA Region V -- Mary Murphy
Compliance Monitoring Section

ENV 19-87

UNOCAL 46

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
#P 313-581-776

John K. Bassett
Manager, Chicago Refinery

January 16, 1987

RECEIVED
JAN 22 1987
IEPA-DLPC

Mr. L. W. Eastep
Illinois Environmental Protection
Agency
Division of Land Pollution
Control
2200 Churchill Road
Springfield, Illinois 62706

2014年11月11日

Dear Sir:

FEB 04 1967

U.S. EPA, REGION V

Chicago Refinery, Closure Certification Report for Landfarm Impoundment

Attached are three Closure Certification Reports for the Unocal, Chicago Refinery landfarm surface impoundment which underwent "clean closure" as directed under an IEPA approved closure plan.

Should you have any questions, please direct them to L. D. Erchull at the above telephone number.

Very truly yours,

D. W. Bruckert, Supervisor
Environmental Department

LDE / rm

Attachments

1. Department

RECEIVED

FEB 03 1987

SOLID WASTE BRANCH
H.P. 11th REGION V

00572

217/782-6762

PUT IN
FILE
Part A

Jim Nayka

Log No. C-193-R-1
Received: July 25, 1986

Refer to: 12780J0004 -- Will County

RCRA-Closure

October 22, 1986

RECEIVED

OCT 27 1986

Mr. Darrell W. Bruckert
Supervisor, Environmental Services
UNOCAL Corporation/Chicago Refinery
Lemont, Illinois 60439

SOLID WASTE DIVISION
U.S. EPA, REGION V

Dear Mr. Bruckert:

The closure plan modification submitted by UNOCAL has been reviewed by this Agency. Your request to delete conditions 1, 2, 3, 4, 5, and 7 has been denied for the following reasons:

CONDITIONS 1, 2, 4, and 7

One of the agreements reached in the March 12, 1986 meeting was that all soil in which the total concentration of priority pollutant polynuclear aromatic hydrocarbons (PAH's) is greater than 1 ug/Kg must be removed from the surface impoundment. The results of sample UC-1 in Table 1 of the closure plan modification clearly show that the total concentration of priority pollutant PAHs in the sample equals 6.27 ug/Kg. Therefore the soil at sample point UC-1 must be removed. In order to certify that the surface impoundment has been "clean closed", UNOCAL must document that all soil around sample point UC-1 with a total priority pollutant PAH concentration greater than 1 ug/Kg has been removed. This will require additional testing around this sample point.

The closure cost estimate must be revised to include these changes.

CONDITION 3

This condition will remain in the closure plan until UNOCAL can document that the surface impoundment has been clean closed.

CONDITION 5

If the wastewater treatment sludge is the only waste which will be placed in the impoundment, it appears that this condition has been met.

Page 2

Pursuant to 725.212(d), you must submit a revised closure plan within 30 days which adequately responds to the above noted comments. Failure to submit a revised plan within 30 days will be considered non-compliance with the interim standards of 725 Subpart C -- Closure and Post-closure and Subpart H -- Financial Requirements.

All other conditions [REDACTED] 1986 approved closure plan remain the same.

Should you have any questions regarding this matter, please contact Bob Watson at 717/782-0762.

Very truly yours,

Lawrence R. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LRE:WRM:jd/D253g/30-31

(initials)
Attachment

cc: Northern Region
Division File - Closure
Financial Assurance Unit
USEPA Region V -- Jim Hayka
USEPA Region V -- Mary Murphy
Compliance Monitoring Section



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

230 SOUTH DEARBORN ST.

CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

5HS-JCK-13

SEP 26 1986

Mr. Don Beasley
A.T. Kearney, Inc.
P.O. Box 1405
Alexandria, Virginia 22313

Dear Mr. Beasley:


The project plan for the Union Oil Company project (R05-15-09) is approved.

The standard project plan approval form is enclosed with this letter.

Only Task 01 which covers development of the project plan is approved.

Because the facility is closing, the project should be ~~cancelled~~ *terminated*

Sincerely yours,


Kenneth W. Burch
Region V Project Officer

Enclosure

cc: | Jerry Gers, ATK
| Monica Roll, ATK
| Lily Herskovits, 5HS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

RECEIVED
SEP 18 1986

SOLID WASTE DIVISION
U.S. EPA, REGION V

DATE: SEP 18 1986
SUBJECT: PEC on Unocal at IEPA
at IEPA Headquarters
Springfield (8/28/86)

FROM: Jonathan Cooper
Hydrologist

TO: Union Oil Company
(Compliance File)
ILD 041 550 567

Issue 1: Permits issue of "closure" of land treatment area that was used for disposal of K051 waste for 6 months in 1981, but since that time has only been used as area to spread out lime-stabilized wastewater treatment sludges (non-hazardous).

(a) Unocal would like to:

- (1) Use their 6-8 years of ground-water data to show no significant migration of organics or Cr and lead (Pb) have occurred
- (2) Test soil and residual wastes in place to characterize (by depth):
 - (a) Cr and Pb concentrations
 - (b) Organics
 - (c) Any breakdown products present

- (3) Show that the K051 (of 5 yrs. ago) is stabilized; no 10. a problem;
- (4) Continue placing non-hazardous wastes after "closure" (as they have been doing for 5 years)

- (b) Lucero Memo - application here?
- (c) Jim Mayka and Lily H. (U.S. EPA) have been to the Rob Watson (IEPA) recently and are working on it
- (d) Unocal is trying to weigh the cost of a Part and post-closure permit and ground-water mo

Issue 2: Subpart F Violations stated in 6/25/86 PECL to Unocal:

1. IEPA faults the g-w monitoring program for:

- a. Well spacing (minimum of 500' between)
- b. Well screens too long (all but one are 20' long; that one is 30')

----- This fact, especially in combination with even longer sand packs around those screens, may lead to:

- (1) Possible dilution of contaminants in ground-water samples collected for analysis
- (2) Monitoring of as many as four distinct lithologic units (e.g., till, sand, and dolomite bedrock) by one well screen.

- c. In some wells, bentonite grout was not used to seal annular space above well screens---rather, local glacial clays were backfilled.

2. IEPA wanted/tried to convince Unocal to:

- a. Conduct a program of additional borings (especially downgradient) to produce better geologic cross sections to aid in proper placement of new wells.
- b. Monitor distinct lithologic zones in uppermost aquifer by nested wells (e.g., the dolomite, the thick continuous sand unit at 630' elevation, and any perched or other hydraulically connected water bearing zones at high elevations)----(2a. would help in location of screened sections in additional wells)

3. Unocal insisted that:

- (a) Their g-w monitoring program/system has performed well (i.e., it triggered assessment in 1984 for decreased pH, but because of no significant g-w contamination being found, Unocal is back to detection monitoring)
- (b) IEPA had agreed to well and screen locations 2-4 years ago -- can't change yearly;
- (c) Wells installed using less sophisticated technology are not obsolete;
- (d) Well screens --- water table located about half way up them, therefore not monitoring several lithologic zones simultaneously; actually, longer sand packs should enhance downward flow of any contaminants and allow sooner detection;

(f) Additional g-

4. PEC Conclusion/Agreements reached:

(a) Neither side gave any c

asked Unocal to j

and address

S. EP

- (a) Neither side gave any concessions;
- (b) IEPA asked Unocal to justify their system (answer of PECL) and address Attachment B by September 15, 1986; send copy to U.S. EPA;
- (c) Unocal was informed of the referral to U.S. EPA, of time constraints on IEPA and U.S. EPA, and of the probability of a penalty for violations found during the OME in May 1986;
- 8/28/86
- September 30, 1986:
1. after/prior to receiving
- 8/86

Re: Unocal PEC 8/28/86

re: Unocal 8/28/86
PEC September 3
5. U.S. EPA's options before September 3
Issue Administrative Order (3008(a): after 7/15
September 15 response
Locations of facility as in CME of 5/16/86
of their g-w program (by s
tion by s

- U.S. EPA's options before September 15 response
- (1) State violations of facility as in CME of 5/16/80
 - (2) Request justification of their g-w program (by specific date): (?)
 - (3) Request additional subsurface exploration by specific date:

5HE-12:Cooper:1r:9/16/86:6/4464

12/17	9/17/86	9/18/86	12/17
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ATTENDANCE RECORD

Date August 28, 1986

Subject Union Oil Pre-Enforcement Conference.

NAME

AFFILIATION

TELEPHONE

Jeannine Balsano

IEPA - Maywood

312/345-9780

PAUL R. JAGIELLO

IEPA / ENF

217/782-5544

Cindy S. Davis

IEPA / Compliance

Jonathan Cooper

USEPA / RCRA ENF

312/886-4464

MARK HANEY

ILLINOIS EPA / COMPLIANCE

217/782-6761

ROB WATSON

IEPA / PERMITS

217/782-6762

LINDA KISSINGER

" "

" "

LINDA EASTEP

"

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EUGENE HIGGINS

"

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DARRELL BRACKHART

INDOCEL

312-257-7761

Lee Enckel

"

"

J. W. FOLCH

FCM - DODGE COUNTY

312-934-4242

TODD GATES

TMC INC.

515-248-1025

UNOCAL 76

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
#P 399 353 604

16 D 041 550 567

A.J. Eliskains
Manager, Chicago Refinery
Eastern Region

May 7, 1986

Mr. Lawrence W. Eastep
Illinois Environmental Protection
Agency
Division of Land Pollution
Control
2200 Churchill Road
Springfield, Illinois 62706

MAY 12 1986

Dear Sir:

Continued Operation of Unocal's
Land Treatment System

One of the issues raised during our meeting of March 12, 1986, was the possibility of Unocal continuing to operate the land treatment system under an approved, long-term Closure Plan. Your suggestion was for Unocal to write a letter proposing an approach, to which the Illinois EPA could then respond. This letter is in response to your suggestion.

A review of Subpart G - Closure and Post-Closure under the Illinois Administrative Code, Title 35, Section 725.213(b) indicates that the Director of the Illinois Environmental Protection Agency may approve a closure period greater than 90 days, under certain circumstances. Unocal believes that Section 725.213(b)(i) and (iii) have specific application to the continued operation and ultimate closure of the land treatment system. We base our conclusion on the following points:

1. Unocal has not placed any hazardous wastes on the land treatment plots since 1981. Under a long-term Closure Plan, Unocal will continue to apply only non-hazardous wastes to the land treatment plots.

May 7, 1986

2. The remaining life of the land treatment system is relatively short (approximately seven years), based on chromium and lead as limiting concentrations in the soil. The continued operation for non-hazardous wastes would allow Unocal to utilize this remaining period.
3. Significant offsite disposal costs would be avoided, if Unocal were allowed to continue operation of the land treatment system.
4. The continued management of non-hazardous wastes onsite will prevent the unnecessary utilization of offsite disposal space which is severely limited in Illinois.
5. Unocal will be required to document how final closure would minimize or eliminate any threats to human health or the environment. The continued operation as a non-hazardous land treatment system will provide sufficient time to do so.

Additionally, at the close of our March 12, 1986 meeting, a question was raised as to how the forthcoming ban on land disposal of hazardous wastes would impact on Unocal's operation. The ban would not affect Unocal because only non-hazardous wastes would be land applied.

We appreciate this opportunity to present our thoughts and look forward to your suggestions as to how we can successfully implement the above concept. Should you have any questions, please contact L. D. Erchull at (312) 257-7761.

Very truly yours,



D. W. Bruckert, Supervisor
Environmental Services

LDE:rm

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MAY 12 1986

Log 193 Closure

Unocal Refining & Marketing Division
Unocal Corporation
Chicago Refinery
Lemont, Illinois 60439
Telephone (312) 257-7761

ENV 159-86

UNOCAL 76

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
#P 399 353 638

A.J. Eliskalns
Manager, Chicago Refinery
Eastern Region

July 23, 1986

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JUL 29 1986

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JUL 25 1986
IEPA-DLPC

Mr. Lawrence W. Easter
Illinois Environmental Protection
Agency
Division of Land Pollution
Control
2200 Churchill Road
Springfield, IL 62706

SWD - AIS

U.S. EPA, REGION V

Dear Sir:

RE: 1978030004 - Will County
Lemont/Union Oil Company of
California, Chicago Refinery
ILD041550567 - Impoundment
Closure Plan Modification

Unocal is submitting this letter in response to the conditions in your letter of February 27, 1986 (Attachment A), which grants approval of the closure plan for the surface impoundment located within our hazardous waste land treatment area.

During our meeting of March 12, 1986, on the above approval letter, it was agreed that Unocal could resample locations 1, 5, and 6 in the upper cell of the surface impoundment, and analyze these additional samples for polynuclear aromatic hydrocarbons (PAH's) using both the fluorescence screening procedure originally used, as well as for the specific PAH's, as listed under 40 CFR 136 Method 625 S. If the sum of the specific PAH's (priority pollutants) would total 1 milligram per kilogram (mg/kg) or less, then the Illinois Environmental Protection Agency (IEPA) would reconsider their conditions specified in the February 27, 1986 approval letter.

ADOC

COPY 2

July 23, 1986

The additional samples at locations 1, 5 and 6 were obtained on April 28, 1986 by Environmental Resources Management-North Central, Inc. Samples were sent by express mail to Rocky Mountain Analytical Laboratory (RMAL), Arvada, Colorado, and were received by RMAL on April 29, 1986. Please note that RMAL has informed us that the analytical procedures originally specified (40 CFR 136 Method 625 S) have never been formalized by the federal EPA and in fact, as proposed, Method 625 S is identical to analytical procedures specified in SW-846 for base/neutral organics using gas chromatography/mass spectrometry analysis. Therefore, analytical procedures specified in "SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," were used by RMAL.

In addition to the three soil samples, a sample of the wastewater treatment sludge, which will be placed in the surface impoundment, was obtained and analyzed for PAH's by fluorescence screening, specific PAH's by SW-846 and the four general hazardous waste characteristics. This sample was obtained and analyzed in response to Condition 5 of the February 27, 1986 letter.

The complete RMAL analytical report on these four samples is included as Attachment B to this letter. This data is shown in Table 1. Please note that 1-methyl naphthalene was included in the analysis. As this compound is not part of Method 625 S or Method 8270 of SW-846, the value is not used in any calculations. The results of our statistical review of the data is shown on Table 2. The following conclusions can be made from the data and the statistical analysis.

- o For Sample 1, which is the wastewater treatment sludge to be placed in the surface impoundment, there is a 95% upper confidence limit (UCL) that the sum of the specific PAH's are less than 1 mg/kg. Further, data shown in Attachment B show that this sludge does not fail any of the four general hazardous waste characteristics (ignitability, reactivity, corrosivity or EP Toxicity). There should be no concern on placing this sludge in the surface impoundment.
- o For the basin, we find that the average specific PAH total is most likely between 0.4 and 0.6 mg/kg, as shown in Table 2. The upper limit was determined by using the average ratio of the PAH by SW-846 to the values from the PAH scan plus the 95% range (1.96 S.D.) from Table 1. The lower limit used the same ratio minus the 95% range (1.96 S.D.) range from Table 1.

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JUL 25 1986
IEPA-DLPC

Mr. Lawrence W. Eastep

-3-

July 23, 1986

Based on the above, Unocal believes there is no technical justification for the IEPA to require the removal of any soil from the bottom of the surface impoundment given the low levels of the PAH compounds and their low mobility in the clay soils of the site. Based on the above information, annual testing for the migration of the PAH compounds is also not warranted. Further, Unocal believes that this submittal responds directly to Conditions 1, 2, 4, 5 and 7 of the IEPA letter of February 27, 1986 and that those conditions should be withdrawn.

With respect to Condition 3, which requires that the groundwater monitoring program should be modified to include PAH's, Unocal believes that the data originally submitted as part of the closure plan, and the data contained herein, does not justify the IEPA's requirements. Further, since Unocal is now subject to an pre-enforcement conference regarding the groundwater monitoring program, this issue would be better resolved within that action.

Should you have any questions, please direct them to L. D. Erchull at (312) 257-7761.

Very truly yours,

DW Bruckert/LDE

D. W. Bruckert, Supervisor
Environmental Services

DWB/LDE/rm

Enclosure

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JUL 25 1986
IEPA-DLPC

TABLE 1

SUMMARY OF SURFACE IMPOUNDMENT DATA

Parameter	Units	SOIL SAMPLE NUMBER (*)				WASTEWATER SLUDGE (4/28/86)
		1	5	6	SD(**)	
ACENAPHTHENE	ug/kg	BDL	BDL	BDL	21%	BDL
ACENAPHTHYLENE	ug/kg	BDL	BDL	BDL	26%	BDL
ANTHRACENE	ug/kg	BDL	BDL	BDL	27%	BDL
BENZO(a)ANTHRACENE	ug/kg	BDL	BDL	BDL	26%	BDL
BENZO(a)PYRENE	ug/kg	1300	BDL	BDL	32%	BDL
BENZO(b)FLUROANTHENE	ug/kg	BDL	BDL	BDL	29%	BDL
BENZO(g,h,i)PERYLENE	ug/kg	BDL	BDL	BDL	51%	BDL
BENZO(k)FLUROANTHENE	ug/kg	BDL	BDL	BDL	35%	BDL
CHRYSENE	ug/kg	2300	BDL	BDL	22%	BDL
DIBENZO(a,h)ANTHRACENE	ug/kg	BDL	BDL	BDL	59%	BDL
FLUORANTHENE	ug/kg	BDL	BDL	BDL	28%	BDL
FLUORENE	ug/kg	BDL	BDL	BDL	13%	BDL
INDENO(1,2,3-cd)PYRENE	ug/kg	BDL	BDL	BDL	50%	BDL
NAPHTHALENE	ug/kg	BDL	BDL	BDL	30%	170
PHENANTHRENE	ug/kg	970	BDL	BDL	15%	270
PYRENE	ug/kg	1700	BDL	BDL	15%	BDL
		6270	0	0	30%	440
MDL =		800	160	160		70

UCL = 620 ug/kg
LCL = 260 ug/kg

LEGEND:

* SAMPLE NUMBER IDENTIFICATION

1 - SOIL SAMPLE FROM LOCATION 1 :4/28/86
5 - SOIL SAMPLE FROM LOCATION 5 :4/28/86
6 - SOIL SAMPLE FROM LOCATION 6 :4/28/86
BDL = BELOW METHOD DETECTION LIMIT
MDL = METHOD DETECTION LIMIT
UCL = UPPER CONFIDENCE LIMIT
LCL = LOWER CONFIDENCE LIMIT

** PUBLISHED INTERLABORATORY STANDARD DEVIATION VALUES

RECEIVED
JUL 25 1986
EPA-DLPC

TABLE 2

ESTIMATE OF AVERAGE PAH CONCENTRATIONS

SAMPLE POINT	TOTAL PAH					
	PAH SCAN	PAH SCAN by SW 846				
	(7/30/85)	(4/28/86)	(4/28/86)	M.D.L.	U.C.L.	L.C.L.
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
UO-1	4.5	51.0	6.27	0.16	5.10	5.10
UO-2	2.7			0.16	0.27	0.00
UO-3	1.6			0.16	0.16	0.00
UO-4	ND			0.16	0.16	0.00
UO-5	12.0	2.3	BDL	0.16	0.25	0.10
UO-6	45.0	6.0	BDL	0.16	0.25	0.10
UO-7	0.4			0.16	0.04	0.00
UO-8	1.6			0.16	0.16	0.00
UO-9	0.2			0.16	0.02	0.00
UO-10	0.1			0.16	0.01	0.00
UO-11	ND			0.16	0.16	0.00
UO-12	ND			0.16	0.16	0.00
AVERAGE:					0.56	0.44
(mg/kg)						

M.D.L. = METHOD DETECTION LIMIT

U.C.L. = UPPER CONFIDENCE LIMIT
 (BASED ON AVERAGE RATIO TO PNA SCAN PLUS S.D. FROM TABLE 1)

L.C.L. = LOWER CONFIDENCE LIMIT
 (BASED ON AVERAGE RATIO TO PNA SCAN MINUS S.D. FROM TABLE 1)



217/782-6762

Log No.: C-193

Received: December 9, 1985

D.W. BRUCKERT

MAR 3 1986

Refer to: 1978030004 -- Will County
Lemont/Union Oil Company of California, Chicago Refinery
ILD041550567

February 27, 1986

Union Oil Company of California
Attn: D. W. Bruckert
Chicago Refinery
Lemont, Illinois 60439

MAR 4

Dear Mr. Bruckert:

The closure plan submitted by Union Oil Company of California has been reviewed by this Agency. Your PARTIAL closure plan to close the hazardous waste SURFACE IMPOUNDMENT (S04) STORAGE area is hereby approved subject to the following conditions:

1. The concentrations of the specific polynuclear aromatic hydrocarbons (PAH) which are responsible for the elevated levels in the surface impoundment's soils shall be determined according to EPA approved methods. These PAH concentrations and the methods used to identify them shall be submitted with the Certification of Closure.
2. All soil with PAH concentrations greater than 1.0 mg/kg as determined by 40 CFR 136 Method 625 S shall be removed from the surface impoundment.
3. The groundwater monitoring program shall be modified to include the following additional parameter:

Polynuclear aromatic hydrocarbons (PAH) as determined
by 40 CFR 136 Method 625 S.

4. All areas from which soil has been removed shall be restored to their original contours using uncontaminated clay. The clay shall be placed in 6 to 9 inch lifts and compacted to a minimum density of 90% modified proctor density according to ASTM D 1557-78 Method A.
5. A recent analysis (within one (1) year) of all wastes to be placed in the surface impoundment shall be submitted with the Certification of Closure. The analyses shall include tests for all the characteristics identified under Subpart C of Part 721 of 35 IAC, Subtitle G, and PAHs according to 40 CFR 136 Method 625 S.

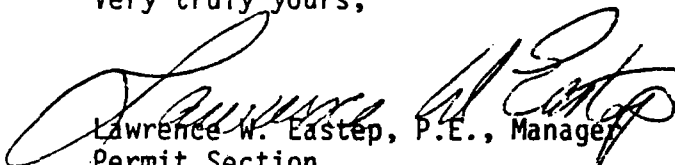
6. A schedule indicating the time that the activities required by the above conditions will take shall be submitted within 45 days of the date of this letter. The time required for closure of the surface impoundment shall meet the requirements of 35 IAC, Section 725.213.
7. The closure cost estimates shall be revised to include the above activities.
8. When closure is complete, the owner or operator must submit to the Director certification both by the owner or operator and by an independent registered professional engineer that the facility has been closed in accordance with the specifications in the approved closure plan. These certifications must be received by this Agency within 30 days after closure, or by September 25, 1986. All certifications, logs, or reports which are required to be submitted to the Agency by the facility should be mailed to the following address:

Illinois Environmental Protection Agency
Division of Land Pollution Control (#24)
Permit Section
2200 Churchill Road
Springfield, Illinois 62706

9. This facility must continue to meet the applicable requirements of 35 IAC, Subtitle G for those units identified on the Part A application (i.e., the land treatment area) not approved for closure herein.
10. The approval of this partial closure does not relieve Union Oil Company of California of the responsibility for providing financial assurance for the remainder of the facility which is subject to closure, in accordance with 35 IAC, Section 725.243.

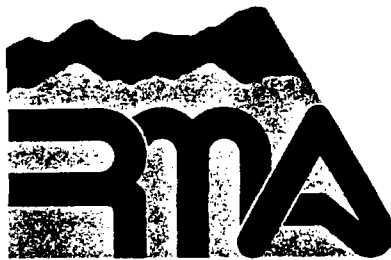
Should you have any questions regarding this matter, please contact Rob Watson at 217/782-6762.

Very truly yours,


Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:WRW:tk:5/3/26

cc: Northern Region
Division File
Financial Assurance Unit
USEPA, Region V, Ann Budich
Compliance Monitoring Section



Rocky Mountain Analytical Laboratory

June 6, 1986

Jim Polich
ERM-North Central, Inc.
835 Sterling Avenue
Palatine, IL 60067

Dear Mr. Polich:

Enclosed are the results for the analysis of the four samples received on April 29, 1986.

Please call if you have any questions.

Sincerely,

Iwao Okuno
Senior Scientist
Chromatography Department

Reviewed by:

Michael P. Phillips, Ph.D.
Director
Mass Spectrometry Department

IO/MPP/rb
Enclosures

RMAL #61394

SUMMARY OF ANALYTICAL METHODOLOGY AND RESULTS

for

ERM-North Central, Inc.

On April 29, 1986, Rocky Mountain Analytical Laboratory (RMAL) received four soil samples as shown in the enclosed Sample Description Information sheet. The analytical results for these samples are presented in the enclosed tables, organized as follows:

- Inorganic Parameters,
- EP Toxicity II Metals,
- PAH Screen,
- PAH Analysis by GC/MS.

With the exception of the PAH Screen, analyses were performed according to methods in SW-846, incorporating changes developed and implemented by RMAL. Because methods such as 625 S have not been promulgated as final rules, the methods in SW-846 were used to prepare and analyze the samples. The polynuclear aromatic hydrocarbons, for example, were analyzed by GC/MS according to Method 8270 in SW-846. As stated in section 1.2 of the method; "This method is applicable to nearly all types of samples, regardless of water content, including aqueous sludges, caustic liquors, acid liquors, waste solvents, oily wastes, mousses, tars, fibrous wastes, polymeric emulsions, filter cakes, spent carbons, spent catalysts, soils and sediments.

The samples were screened for PAH's using a modification of the fluorescence procedure developed by Dr. Roy O. Ball of ERM-North Central, Inc. A 40-gram samples of soil and 40 ml of isooctane were agitated in an ultrasonic bath for 20 minutes. The mixture was centrifuged, and the isooctane layer was separated for analysis for PAH content. A 10 microliter aliquot of the isooctane extract was injected into a columnless HPLC system equipped with a fluorescence detector. The excitation and emission wavelengths were 254 nm and 400 nm, respectively. The flow rate of the mobile phase, isooctane, was 1 ml/min. The fluorescence response of the sample was compared with the response of external standard solutions of benzo(a)pyrene. Since the samples contain a mixture of PAH's, the results reported are only semiquantitative estimates at best. Thus, higher results would be obtained if dibenzo(a,h)anthracene (response of 0.06 relative to benzo(a)pyrene) was used as the standard, and lower results if anthracene (relative respond of 6) was used as the standard. The results are reported in units of mg/kg of solid, based on the weight of the undried sample.

For the gas chromatography/mass spectrometry analysis, sample 61394-01 was prepared as a water sample because of the high moisture content (76%). The sample was extracted using a continuous liquid-liquid extraction. The results are reported in units of ug/kg (wet weight).

The percentage moisture, determined gravimetrically, of the samples were as follows: Sample 61394-01 (76.2%), 61394-02 (9.31%), 61394-03 (14.6%) and 61394-04 (12.8%).

SAMPLE DESCRIPTION INFORMATION

for

ERM-North Central, Inc.

<u>RMA Sample No.</u>	<u>Sample Description</u>	<u>Sample Type</u>	<u>Date Sampled</u>	<u>Date Received</u>
61394-01	A- COMBINED WASTEWATER TREATMENT SLUDGE	SOLID	04/28/86	04/29/86
61394-02	1 0-12" SOIL COMPOSITE	SOLID	04/28/86	04/29/86
61394-03	5 0-12" SOIL COMPOSITE	SOLID	04/28/86	04/29/86
61394-04	6 0-12" SOIL COMPOSITE	SOLID	04/28/86	04/29/86

June 6, 1986

ANALYTICAL RESULTS

for

ERM-North Central, Inc.

RCRA WASTE CHARACTERISTICS INORGANIC PARAMETERS

<u>Parameter</u>	<u>Units</u>	<u>61394-01</u>	
Corrosivity/pH	units	8.42	(0.01)
Reactive Sulfide*	mg/kg	ND	(0.5)
Reactive Cyanide*	mg/kg	ND	(0.1)
Ignitability	°F	NF	-

*Limit not defined: 10ppm considered to be nonhazardous.
500ppm considered to be hazardous.

ND = Not detected. NF = No flash below 200°F. Detection limits in parentheses.

ANALYTICAL RESULTS

for

ERM-North Central, Inc.**EP TOX II, CONCENTRATION OF EP TOXICITY METALS CALCULATED BY INCORPORATING THE OIL VOLUME¹**

<u>Parameter</u>	<u>Units</u>	<u>61394-01</u>	
Arsenic	mg/L	0.11	(0.01)
Barium	mg/L	0.11	(0.025)
Cadmium	mg/L	ND	(0.02)
Chromium	mg/L	0.72	(0.025)
Lead	mg/L	ND	(0.15)
Mercury	mg/L	ND	(0.003)
Selenium	mg/L	0.28	(0.03)
Silver	mg/L	ND	(0.014)

Notes

¹ = The oil phase is accounted for, but is not treated as a solid (i.e., oil phase volume = 1x the weight of the oil phase).

ND = Not Detected.

Detection limits in parentheses.

ANALYTICAL RESULTS

for

ERM-North Central, Inc.

BASE/NEUTRAL ORGANICS

<u>Parameter</u>	<u>Units</u>	<u>61394-01</u>		<u>61394-02</u>		<u>61394-03</u>		<u>61394-04</u>	
Acenaphthene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Acenaphthylene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Anthracene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Benzo(a)anthracene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Benzo(a)pyrene	ug/kg	BDL	(70)	1300	(800)	BDL	(160)	BDL	(160)
Benzo(b)fluoranthene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Benzo(g,h,i)perylene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Benzo(k)fluoranthene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Chrysene	ug/kg	BDL	(70)	2300	(800)	BDL	(160)	BDL	(160)
Dibenzo(a,h)anthracene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Fluoranthene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Fluorene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Indeno(1,2,3-cd)pyrene	ug/kg	BDL	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Naphthalene	ug/kg	170	(70)	BDL	(800)	BDL	(160)	BDL	(160)
Phenanthrene	ug/kg	270	(70)	970	(800)	BDL	(160)	BDL	(160)
Pyrene	ug/kg	BDL	(70)	1700	(800)	BDL	(160)	BDL	(160)
1-Methyl naphthalene	ug/kg	670	(70)	BDL	(800)	BDL	(160)	BDL	(160)

Notes:

Sample-01 prepped as a "water" by continuous LLE. Two of three B/N surrogates out (low recovery).

BDL = Below Detection Limit.

Detection limits in parentheses.

PAH SCREEN

Parameter

Total PAH as Benzo(a)pyrene

Units

mg/kg

61394-01

6.3 (0.05)

61394-02

51 (0.05)

61394-03

2.3 (0.05)

61394-04

6.0 (0.05)

Detection limits in parentheses.

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JUL 25 1986
EPA-DLPT

7



UNOCAL 76

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
#P 399 353 604

A.J. Eliskalns
Manager, Chicago Refinery
Eastern Region

May 7, 1986

Mr. Lawrence W. Eastep
Illinois Environmental Protection
Agency
Division of Land Pollution
Control
2200 Churchill Road
Springfield, Illinois 62706

Dear Sir:

Continued Operation of Unocal's
Land Treatment System

One of the issues raised during our meeting of March 12, 1986, was the possibility of Unocal continuing to operate the land treatment system under an approved, long-term Closure Plan. Your suggestion was for Unocal to write a letter proposing an approach, to which the Illinois EPA could then respond. This letter is in response to your suggestion.

A review of Subpart G - Closure and Post-Closure under the Illinois Administrative Code, Title 35, Section 725.213(b) indicates that the Director of the Illinois Environmental Protection Agency may approve a closure period greater than 90 days, under certain circumstances. Unocal believes that Section 725.213(b)(i) and (iii) have specific application to the continued operation and ultimate closure of the land treatment system. We base our conclusion on the following points:

1. Unocal has not placed any hazardous wastes on the land treatment plots since 1981. Under a long-term Closure Plan, Unocal will continue to apply only non-hazardous wastes to the land treatment plots.

May 7, 1986

2. The remaining life of the land treatment system is relatively short (approximately seven years), based on chromium and lead as limiting concentrations in the soil. The continued operation for non-hazardous wastes would allow Unocal to utilize this remaining period.
3. Significant offsite disposal costs would be avoided, if Unocal were allowed to continue operation of the land treatment system.
4. The continued management of non-hazardous wastes onsite will prevent the unnecessary utilization of offsite disposal space which is severely limited in Illinois.
5. Unocal will be required to document how final closure would minimize or eliminate any threats to human health or the environment. The continued operation as a non-hazardous land treatment system will provide sufficient time to do so.

Additionally, at the close of our March 12, 1986 meeting, a question was raised as to how the forthcoming ban on land disposal of hazardous wastes would impact on Unocal's operation. The ban would not affect Unocal because only non-hazardous wastes would be land applied.

We appreciate this opportunity to present our thoughts and look forward to your suggestions as to how we can successfully implement the above concept. Should you have any questions, please contact L. D. Erchull at (312) 257-7761.

Very truly yours,



D. W. Bruckert, Supervisor
Environmental Services

LDE:rm

6

UNOCAL 76

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
#P 399 353 587

A.J. Eliskalns
Manager, Chicago Refinery
Eastern Region

March 19, 1986

RECEIVED

MAR 21 1986

SOLID WASTE BRANCH
U.S. EPA REGION V

Ms. Edith M. Ardiente *YJ Kim*
U. S. Environmental Protection
Agency
Region 5
230 South Dearborn Street
Chicago, Illinois 60604

Dear Ms. Ardiente:

Response to Warning Letter
Received March 18, 1986

We received a warning letter from your section because an exposure assessment for a surface impoundment was not sent to your group in 1985. We contacted our previous RCRA contact person (Gale Hruska) who informed us that the new RCRA contact person for us is Lily Herskovits. After contacting her regarding this warning letter, she suggested that we send in a letter of explanation to your attention.

Our site has interim status for a land treatment area plus an impoundment. When our Part B permit was called, we filed an application in 1984 only for the land treatment area because the use of an impoundment was no longer necessary for the land treatment area. We have initiated a clean closure proceeding with the Illinois Environmental Protection Agency on the impoundment in which a post-closure permit should not be necessary.

It is our understanding that since a Part B permit was not filed on the impoundment, the submission of an exposure assessment was not necessary. Should you wish to further discuss this matter, please contact Mr. L. D. Erchull at (312) 257-7761.

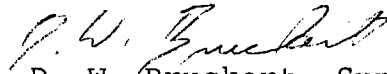
Ms. Edith M. Ardiente

-2-

March 19, 1986

Please note that all future correspondence should be sent to my attention rather than H. D. Haas who is no longer at the Refinery.

Very truly yours,



D. W. Bruckert, Supervisor
Environmental Services

LDE/rm

CERTIFIED

P 399 353 587

MAIL



217/782-6762

Refer to: 1978030004 -- Will County
Lemont/Union Oil of California
ILD041550567

January 23, 1986

RECEIVED

JAN 29 1986

JOHN HARTMAN
U.S. EPA, REGION V

Edith M. Ardiente, P.E.
Chief, Technical Program Section
Attention: James Mayka
U.S. Environmental Protection Agency
Region V
230 South Dearborn
Chicago, Illinois 60604

Dear Ms. Ardiente:

Attached please find for your review and comment one copy of a closure plan dated December 6, 1985, which we received on December 9, 1985 for the closure of the surface impoundment. Please provide us with your comments as soon as possible; we hope to complete our review by February 21, 1986.

If you have any questions regarding this closure, please contact Rob Watson of my staff at 217/785-8410.

Very truly yours,

Lawrence W. Eastep / *ew*
Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:WRW:mgg0165f/17

Attachment

cc: Division File
Northern Region
Ann Budich, USEPA, Region V
Financial Assurance Unit

RECEIVED

JAN 23 1980

U.S. AIR FORCE
1 JAN 23 1980

Log 143 - Closure

Union 76 Division: Eastern Region

Union Oil Company of California

Chicago Refinery

Lemont, Illinois 60439

Telephone (312) 257-7761

ENV 348-85



CERTIFIED MAIL

RETURN RECEIPT REQUESTED

#P 330 175 803

A. J. Eliskalns
Manager, Chicago Refinery

December 6, 1985

Mr. Larry W. Eastep
Permit Section, DLPC
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, Illinois 62706

Dear Sir:

Surface Impoundment -
Closure Plan

Attached are two copies of a closure plan for a surface impoundment located in the land treatment area of Union Oil's, Chicago Refinery. This closure plan fully complies with the closure requirements of both Subparts G and K of 40 CFR 264. It will allow Union Oil to "close" the surface impoundment and subsequently reopen the impoundment for winter storage of non-hazardous wastes.

Should you have any questions, please contact L. D. Erchull for assistance at the above telephone number.

Very truly yours,

A handwritten signature in cursive script, appearing to read "D. W. Bruckert".

D. W. Bruckert, Supervisor
Environmental Services

LDE/rm

Attachments

RECEIVED

DEC 09 1985

IEPA-DLPC



217/782-6762

Date Received: April 1, 1985
Log #C-82

Refer to: 1978030004 -- Will County
Lemont/Union Oil
ILD041550567

G, TRS, TSD, PA-8

RECEIVED

July 2, 1985

JUL 12 1985

Union Oil Company of California
Chicago Refinery
Lemont, Illinois 60439

STW-113
U.S. EPA, REGION V

Dear Mr. Bruckert:

The closure plan submitted by Union Oil and prepared by L. D. Erchull has been withdrawn, but our review comments are provided below for your information.

1. You have indicated that you propose to remove contaminated soil only to the point where the lead or chromium concentration is below 1000 ppm. You have not:
 - A. Demonstrated, under 721.103(c) and (d), that the soil remaining in the impoundment will no longer be a hazardous waste (725.328(b)); and
 - B. Demonstrated the level of lead or chromium remaining in this soil will meet the closure performance standard of Section 725.211.

Information needs to be provided to demonstrate that the placement of nonhazardous liquids in the impoundment will not cause, threaten or allow groundwater pollution because of excessive chromium or lead levels (or other constituents) remaining in the soil, or otherwise present a threat to human health or the environment.

This information should also address the levels of any lead or chromium found in the soils surrounding the impoundments (their concentration and extent in the soils).

2. The cost estimate does not include the cost of removal and disposal of any contaminated soils. 725.242.
3. An estimate of the maximum inventory of wastes in storage and in treatment at the time of closure was not indicated.



Page 2

It is our understanding that the results of analyses of soil samples taken from the bottom of the impoundment, and background levels for lead and chromium will be provided in the revised closure plan. As discussed in our meeting on June 21, 1985, the locations of the soil borings and the soil analyses will be the same as those indicated in the first closure plan (Log No. C-82), but the composite samples shall be from the top 6 inches, the next 6 inches, and the next 2 feet in 1 foot increments.

Should you have any questions concerning this matter, please contact Rob Watson at the above telephone number.

Very truly yours,

Lawrence W. Eastep
Lawrence W. Eastep, P.E., Manager
Permit Section
Division of Land Pollution Control

LWE:WRW:ct/1140E,12-13

WRW
cc: Northern Region
Division File
Financial Assurance Unit
USEPA Region V -- Jodi Traub ✓
Bill Radlinski

Log 82 - Closure

Union 76 Division: Eastern Region

Union Oil Company of California

Chicago Refinery

Lemont, Illinois 60439

Telephone (312) 257-7761

ENV 181-85

ERT
RCW



CERTIFIED MAIL
RETURN RECEIPT REQUESTED
#P08 8720447

A. J. Eliskalns
Manager, Chicago Refinery

June 25, 1985

Mr. Larry Eastep
Illinois Environmental Protection
Agency
Division of Land Pollution Control
2200 Churchill Road
Springfield, Illinois 62706

Dear Sir:

Closure Plan Withdrawal

At the present time, we are withdrawing our Impoundment Closure Plan from further consideration. Please reference log number 82.

As discussed at our June 21, 1985, meeting with you and your staff, we intend to submit a revised plan which will include data from samples taken from the bottom of the surface impoundment.

Should you have any questions, please contact L. D. Erchull at the above telephone number.

Very truly yours,

A handwritten signature in cursive script, appearing to read "D. W. Bruckert".

D. W. Bruckert, Supervisor
Environmental Services

LDE:dlw

RECEIVED

JUN 27 1985

IEPA-DLPC

5 #13
Union 76 Division: Eastern Region

Union Oil Company of California
Chicago Refinery, Lemont, Illinois 60439
Telephone (312) 257-7761

ENV 467-84



CERTIFIED MAIL
RETURN RECEIPT REQUESTED
#P08 8720365

A.J. Eliskalns
Manager, Chicago Refinery

RECEIVED

DEC 17 1984

EPA REGIONAL
OFFICE OF REGIONAL
ADMINISTRATION

December 14, 1984

RECEIVED
DEC 18 1984

WASTE MANAGEMENT
BRANCH

Mr. Valdas Adamkas
Regional Administrator
United States Environmental
Protection Agency - Region V
Waste Management Branch
230 S. Dearborn
Chicago, IL 60604

Dear Sir:

Request for Approval in
Principle-Impoundment Closure

After discussion with the U.S. EPA and Illinois EPA, Union Oil of California (Union Oil) seeks clarification and "approval-in-principle" from both agencies for the closure of a surface impoundment which is part of its hazardous waste land treatment area, as described in its recently submitted Part B permit application.

This request, and the information contained herein, describes the approach proposed by Union Oil. This approach fully complies with the closure requirements of both Subparts G and K of 40 CFR 264 and will allow Union Oil to "close" the surface impoundment, and subsequently re-open the impoundment for winter storage of nonhazardous wastes. Our approach and rationale follow.

Description of Surface Impoundment Operations

Union Oil has recently submitted a Part B permit application to the U.S. EPA for the operation of a land treatment facility.

Within that permit application, Union Oil proposed to close the surface impoundment contained within the hazardous waste land treatment area, and to submit a closure plan by December 31, 1984. See Figure 1.

The surface impoundment, as shown in Figure 2, consists of 2 cells and encompasses an area with approximate dimensions of 700 feet by 200 feet. Sludges are emptied into the first cell and flow by gravity into the second cell. During winter storage, the freezing and subsequent thawing of the sludges results in dewatering. Released liquids are drawn off in the second cell and flow to the refinery's wastewater treatment system. Residual solids contained within the surface impoundment are removed using a front-end loader during the spring and summer period and are placed on the active land treatment plots. Hazardous wastes generated at the refinery are not placed in the surface impoundment, but rather are placed directly on the land treatment plots.

During late 1980 and early 1981, Union Oil stored a sludge mixture which contained API separator sludge (a listed hazardous waste) within the surface impoundment. The quantity of API separator sludge placed within the surface impoundment amounted to approximately 1% of the total waste mixture placed in the surface impoundment during that period, as shown on Table 1. Union Oil has not placed any other hazardous wastes in the surface impoundment since the API separator sludge, and has no need to do so in the future.

Since hazardous wastes were placed in the surface impoundment, current federal regulations require that the surface impoundment either be permitted under the Part B permit application or closed.

The surface impoundment serves a required function in the total operation of the land treatment facility in that nonhazardous wastes are stored in the impoundment during the winter operations when land treatment is impractical. Union Oil desires to continue to use the surface impoundment for this function. Consequently, Union Oil proposes to "close" the surface impoundment and immediately thereafter reopen the impoundment for winter storage of nonhazardous wastes and continue operation of the impoundment as a decant basin. Winter freezing of nonhazardous sludges placed within the impoundment promotes dewatering during the spring thaw and provides a more easily handled material for placement on the land treatment plots.

Closure

Closure will be initiated after the spring thaw and the removal of any materials contained in the surface impoundment. For purposes of monitoring the closure activities, however, it is proposed that the following schedule for implementation be adhered to:

- 1) It is anticipated that all sludges will be removed by the end of June, 1985.
- 2) Within 15 days (July, 1985) after removal of all winter stored nonhazardous wastes in the surface impoundment, Union Oil will proceed to implement the bottom soil testing program as described below.
- 3) Soil samples will be immediately transferred to a laboratory for total metals and EP toxicity metals. Laboratory turn-around is expected to be approximately six weeks (the end of August, 1985).
- 4) A report documenting the methods and procedures of soil sampling used, and the results of the analytical program, will be prepared after the laboratory data has been received and will be submitted to the Illinois EPA by the end of September, 1985.
- 5) Final closure will be completed within 30 days of approval.

When Union Oil implements closure, all procedures and methods will be documented. This documentation will be signed and dated by a Union Oil representative. Copies of all analytical results and any other pertinent comments will be made part of this certification.

An independent registered professional engineer will be utilized for inspection of the surface impoundment after all sludges have been removed and will obtain the bottom soil samples as previously described. A closure certification will be prepared by this independent engineer for submittal by Union Oil to the State of Illinois and EPA Region V

offices. This certification will complete the requirements of 40 CFR 264.115.

Soil Tests

It is proposed that soil borings be taken at the bottom of each of the cells at approximately the mid-point of each cell (shown on Figure 2). A total of six borings will be taken. Two composite soil samples will be obtained from each boring, one composite from the first two feet and one composite from the next two feet. Each boring will therefore be four feet in total depth and a total of twelve (12) soil samples will be obtained. Borings will be obtained from the flights down to the appropriate depth. Analyses will include total metals as well as EP toxicity metals. See Table 2 for analytical requirements

Groundwater Monitoring

The surface impoundment is located within the RCRA Part B permitted area. The groundwater monitoring system for the land treatment area will be utilized for post closure monitoring of the surface impoundment (264.228(b)(3)). Figure 1 shows the monitoring well locations in relation to the location of the surface impoundment. Existing well locations provide for both upgradient and downgradient monitoring of the surface impoundment.

Notification of past operations in property deeds will ensure that requirements of 40 CFR 264.120 are fully met. With the anticipated remaining operational life of the land treatment area at approximately 12 years, to be followed by 30 years of post closure monitoring of the land treatment area, monitoring for the surface impoundment will encompass a period greater than 30 years as required under 40 CFR 264.117(a)(1).

Summary

Union Oil proposes the following program:

1. Removal of surface impoundment sludges.
2. Soil testing by an independent contractor.

Mr. Valdas Adamkas

-5-

December 14, 1984

3. Certification of closure by the Company and an independent registered professional engineer.
4. Groundwater monitoring for a minimum of 30 years.
5. Re-opening the surface impoundment for storage of non-hazardous wastes.

We would appreciate your earliest response to this request. If you have any questions, please contact Mr. L. D. Erchull at (312) 257-7761 for assistance.

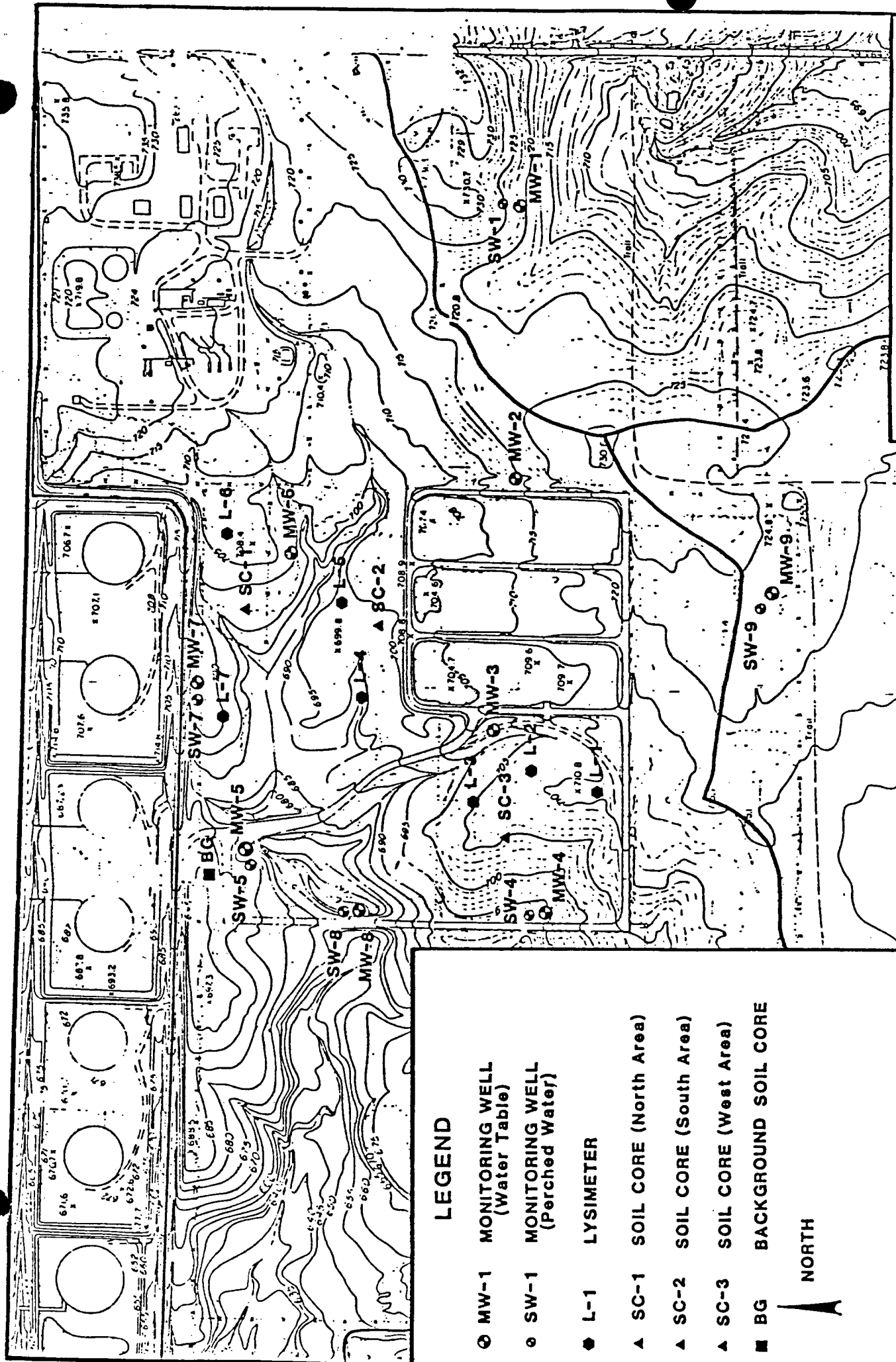
Very truly yours,



D. W. Bruckert, Supervisor
Environmental Services

LDE:hw

cc: Mr. Lawrence Eastep-IEPA



LEGEND

- MW-1 MONITORING WELL (Water Table)
- SW-1 MONITORING WELL (Perched Water)
- L-1 LYSIMETER
- ▲ SC-1 SOIL CORE (North Area)
- ▲ SC-2 SOIL CORE (South Area)
- ▲ SC-3 SOIL CORE (West Area)
- BG BACKGROUND SOIL CORE

NORTH

FIGURE 1
MONITORING SYSTEM
FOR LAND TREATMENT AREA

200 0 200 400 600 800 1000

DATE OF AERIAL PHOTOGRAPHS: 1/25/73 C.A.B. PROJECT NUMBER: CO 8458

CAMERA FOCAL LENGTH: 88.84 mm. CONTOUR INTERVAL: 1 FOOT

UNION OIL OF CALIFORNIA

CHICAGO REFINERY

LAND TREATMENT AREA

T. M. GATES INC.

TABLE 1
HISTORIC LAND APPLICATION RECORD
(Dry Tons)

<u>Waste</u>	<u>1983</u>	Year* <u>1982</u>	<u>1981</u>
API Separator Sludge			18**
Clear Well Sludge		200	
Cooling Tower Sludge	25		
Corrugated Plate Separator Bottoms			
Heavy Oil Sludge		10	
Slop Oil Emulsions			
Storm Water Pond Dredgings	1650	2328	
Tank Cleaning Waste			150
Water & Wastewater Sludge	<u>2060</u>	<u>1444</u>	<u>1800</u>
Totals	3735	3982	1968

* Records unavailable prior to 1981

** Estimated at 1% of Water & Wastewater Sludge

Note: Slop oil emulsions have not been generated as of this date.

RECEIVED

DEC 18 1984

U.S. EPA, REGION V
WASTE MANAGEMENT DIVISION
OFFICE OF THE DIRECTOR

RECEIVED
DEC 19 1984

A.J. Eliskalns
Manager, Chicago Refinery

WASTE MANAGEMENT
BRANCH

Union 76 Division: Eastern Region

Union Oil Company of California
Chicago Refinery, Lemont, Illinois 60439
Telephone (312) 257-7761

ENV 468-84

union 76

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
#P08 8720366

December 14, 1984

Mr. Lawrence W. Eastep, P.E.
Manager
Permit Section
Division of Land
Pollution Control
2200 Churchill Road
Springfield, IL 62706

Dear Sir:

Request for Approval in
Principle-Impoundment Closure

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Original in Docket File

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Mr. Lawrence W. Eastep

-5-

December 14, 1984

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Very truly yours,



D. W. Bruckert, Supervisor
Environmental Services

LDE:hw

cc: Mr. Valdas Adamkus-U.S. EPA ✓

LEGEND

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- ◉ SW-1 MONITORING WELL (Perched Water)
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NORTH

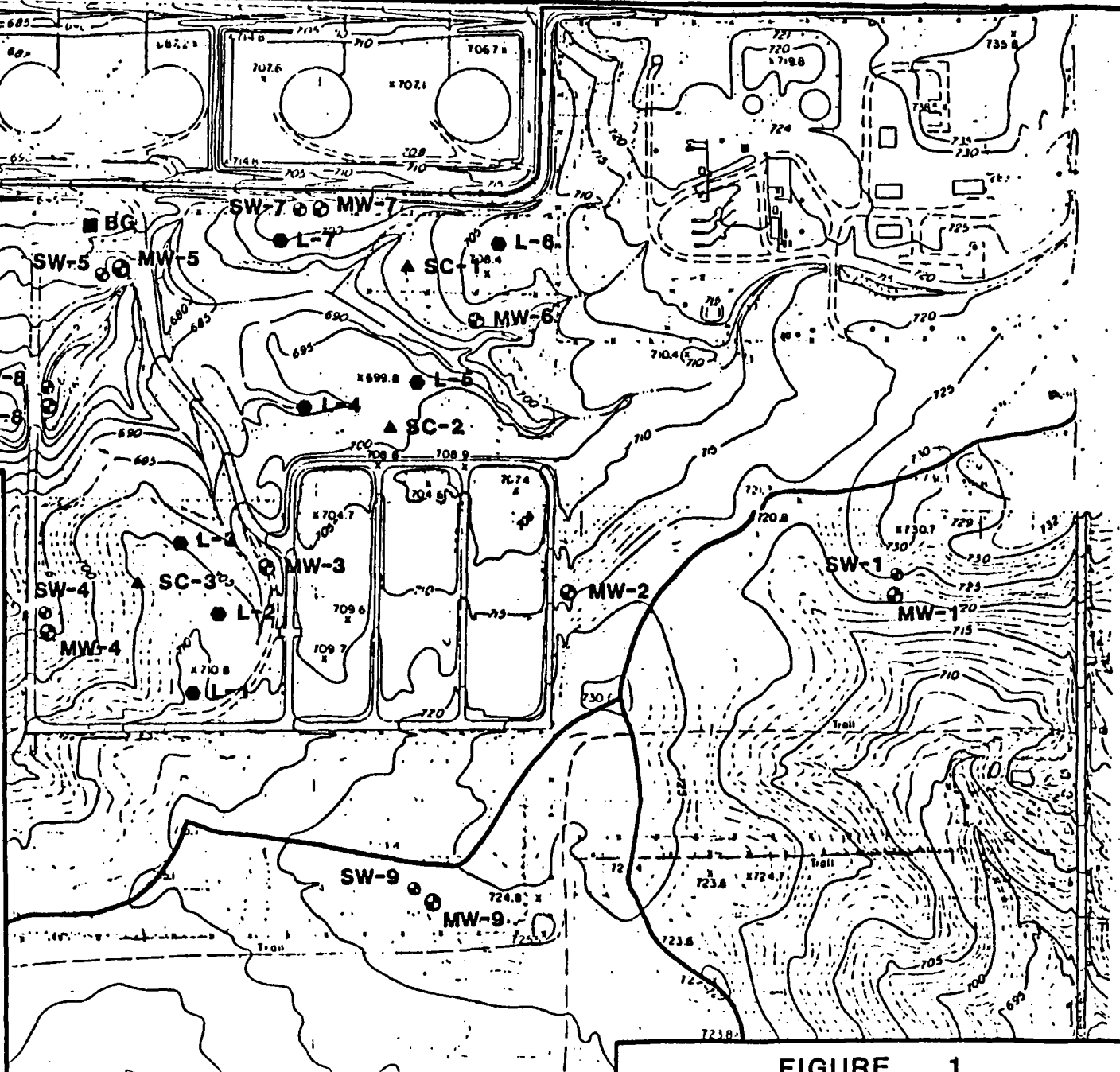


FIGURE 1

MONITORING SYSTEM
FOR LAND TREATMENT AREA

UNION OIL OF CALIFORNIA
CHICAGO REFINERY
LAND TREATMENT AREA

T. M. GATES INC.

200 0 200 400 600 800 1000
DATE OF AERIAL PHOTOGRAPHS: 1/25/73 C. A. S. PROJECT NUMBER: CO 9486
CAMERA FOCAL LENGTH: 88.54 mm. CONTOUR INTERVAL: 1 FOOT

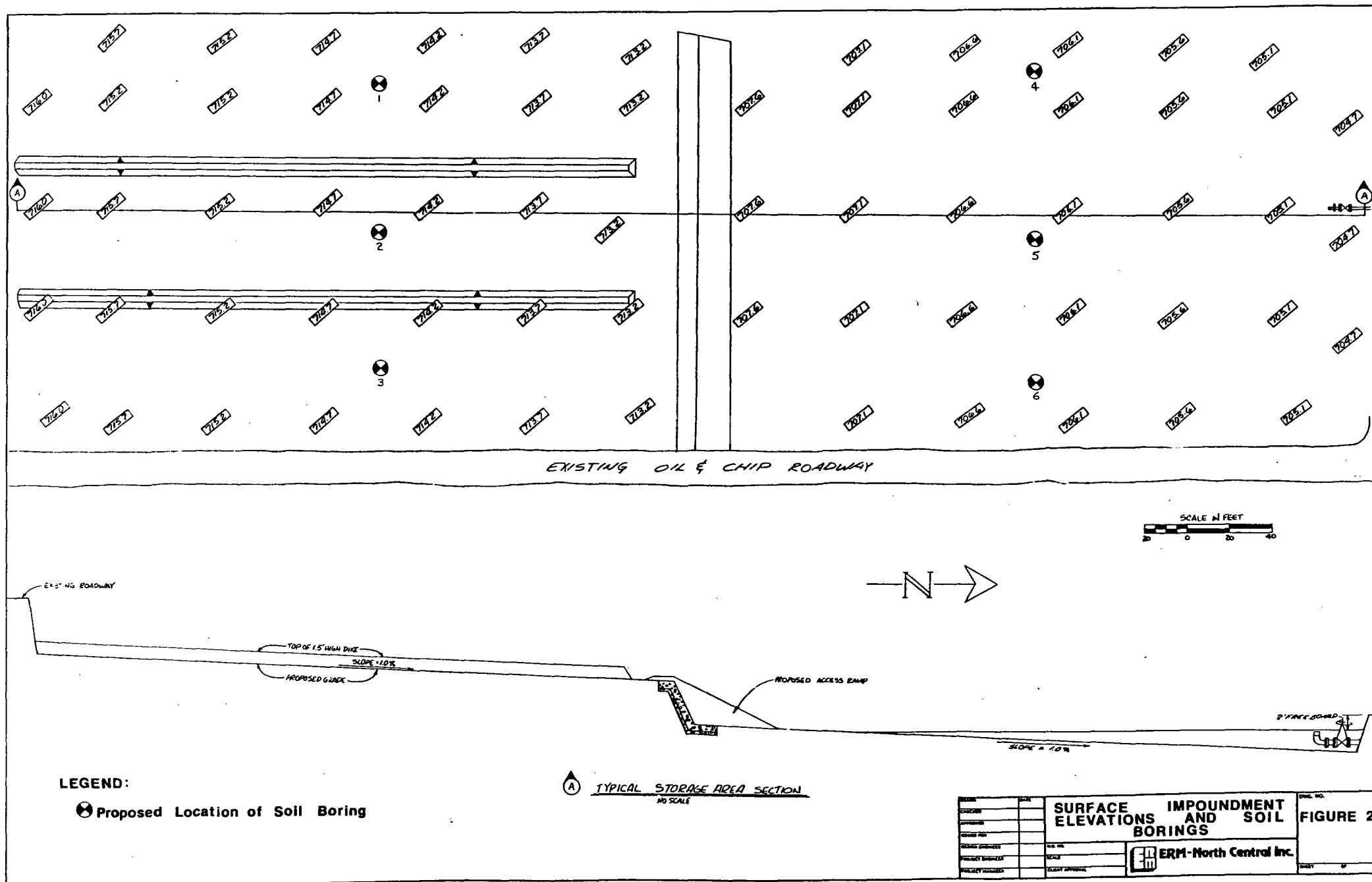


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